4/8/12/16 CHANNEL COLOR VIDEO DEVICE

VDS-4
VDS-8
VDS-12
VDS-16

USER and INSTALLATION Manual

Vds Software 1.1
Manual No 17843 Rev. -

SICEP®

CE

The information in this manual replaces any previously published information. Sicep reserves the right to modify prices and products' characteristics at any time, without further notice.

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Sicep Spa
Via Calabria, 14/16
50052 Certaldo
Florence
Italy

Tel. +390571664166
Fax +390571652285

Web site: www.sicep.it
e-mail: sicep@sicep.it

Dear Customer,
thank you for purchasing a Sicep product. Before starting the installation procedure, we recommend that you read this manual very carefully.

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SICEP spa recognizes in insindacabile and intransgressible way the conditions of guarantee brought back in this manual.

1 - WARNINGS

1.1- GENERAL CONSIDERATIONS

Both the product as well as this manual must be inspected before performing any operation. The information contained in this manual was verified during the writing of the manual itself. The manufacturer reserves the right to modify and improve the product described at any time without advance notice.

1.2- CERTIFICATION

The VDS device is manufactured in accordance with the current EC regulations and is therefore deemed to comply with the following applicable EU Directives:

CE EN60950, EN 55022, EN 55024 and EN 61000, together with the relative updates in accordance with that which is prescribed by the 73/23/EEC (Electrical Safety) and 2004/108/EEC (Electromagnetic Compatibility) Directives, provided the installation procedures contained in the appropriate chapter are respected.

The VDS is a class A device. In a residential environment this device may cause interference with other electronic equipment in the immediate vicinity. In such cases, the user may be required to take adequate measures, such as, for example:

- moving the VDS device itself to another position;
- modifying the passage of the cables which connect to the video cameras;
- moving the device which is experiencing interference farther away from the VDS device.

1.3- MARKINGS

An identification label, which contains the following information, is attached to the bottom of the device: The name of the manufacturer (Sicep S.p.A.), the model, the device's serial number, the date of production, the input power supply data and the complete commercial code.

1.4- GROUNDING

The device must be connected to the electrical system's grounding node through its power cable.

1.5- BACKUP BATTERY

A rechargeable lead-acid battery may be used in conjunction with the VDS device in order to ensure its proper function in the event of temporary loss of power. For this purpose, a battery connector cable comes supplied along with the device. Do not use batteries with capacities greater than that which is indicated in the Electrical Characteristics.

1.6- DISPOSAL OF THE PACKAGING

The cardboard packaging is classified as code 150101 (Directive 9/4/2001). The polyethylene foam edge protectors are classified as code 150102 (Directive 9/4/2001). The packaging must be disposed of in compliance with the current local recycling regulations.

1.7- DISPOSAL OF THE PRODUCT

The components which make up the VDS device are not considered solid urban waste. Rather, the device is made up of electronic cards and can be classified as codes 160214 and 210136. Therefore, the VDS device must be disposed of in compliance with the current local recycling regulations and not as solid urban waste.

1.8- BATTERY DISPOSAL

Lead-acid batteries are not classified as solid urban waste. Rather, they are considered code 160601. Dispose of them in compliance with the current local recycling regulations.

WARNING

WARNING.

Improper disposal of electrical and electronic equipment (EEE) or parts of them may have harmful effects on the environment and human health.

1.9- CONVENTIONAL TERMS USED WITHIN THE MANUAL

EXAMPLE	Describes a specific case which is useful for clarifying a concept
NOTE	Describes additional considerations which are useful for clarifying a specific topic
WARNING	Identifies a situation to be managed with care; follow the instructions carefully as the operation could compromise the device's proper function
CAUTION	Identifies a condition or action which could damage the device
DANGER	Identifies a condition or action which could cause physical injury or death

2 - GENERAL CONSIDERATIONS

2.1- ASSISTANCE

For any assistance required, please contact your local Sicep reseller.

To download free firmware or utility program upgrades, refer to the SICEP Spa website: **www.sicep.it**.

2.2- WARRANTY

Please refer to the warranty certificate which is included at the end of this manual.

2.3- REPAIRS

Please refer to the repair request form which is supplied along with the product.

3 - INTRODUCTION

This chapter describes this manual as well as the terms utilized within it.

3.1- LAYOUT OF THE MANUAL

The manual is made up of 9 chapters and 4 appendixes, which are briefly described below.

- Chapter 1 contains the safety regulations.
- Chapter 2 contains general information.
- Chapter 3 contains the description of the manual and the terms utilized therein.
- Chapter 4 contains the device's technical characteristics.
- Chapter 5 describes the device and its start-up procedures in detail.
- Chapter 6 contains the descriptions of the device's functionalities.
- Chapter 7 describes the user interface.
- Chapter 8 describes the remote control which is supplied with the device.
- Chapter 9 describes the maintenance and troubleshooting operations.
- Appendix A describes the various possibilities which can be employed by a remote user in order to connect to the device.
- Appendix B describes particularly delicate operations which are defined as "special operations"
- Appendix C contains the descriptions of various cables which can be utilized for connecting to the device
- Appendix D describes some of the most common configuration operations to be performed for the device's first installation.

3.2- TERMS AND ABBREVIATIONS

Crossover cable	A reversed Ethernet cable for point to point communication between two devices equipped with network interfaces
Pin-to-pin cable	An Ethernet cable for communication between two devices, equipped with network interfaces, through a switch, router or hub
Default	Indicates the value of the parameters before the device has been configured by the user.
FLASH memory	Indicates the non-volatile memory installed on the main board. The content of this memory is not lost when the device is switched off. This memory contains the device’s operating system.
Fps	Frames per second, indicates the number of frames acquired and/or transmitted in one second.
GOP	Consecutive Groups of Pictures contained in an encoded video flux according to the MPEG specifications.
GPRS	General Packet Radio Service. Mobile telephone technology designed to perform medium speed data transfers.
GSM	Global System for Mobile Communication. Represents a worldwide standard for mobile telephone communications.
H264	Also known as MPEG-4 Part 10, or alternatively MPEG-4 AVC (Advanced Video Coding), this is a proprietary Moving Picture Experts Group digital video compression format with loss.
Hexal	16 video camera view

HSDPA	High Speed Downlink Packet Access
HSUPA	High Speed Uplink Packet Access
ISDN	Integrated Services Digital Network, indicates an International communications standard for voice, video and data transmission over digital or analogue telephone networks.
NA	Not Applicable, indicates that the characteristic in question is not present.
Octal	8 video camera view
Device	Implicitly refers to the VDS device which is the subject of this manual
PSTN	Public Switched Telephone Network, indicates the international telephone network for analogue voice and data transmission. In the manual, this term is also used to refer to analogue modems.
Quad	4 video camera view
RAM	Indicates the volatile memory installed on the main board. The content of this memory is lost when the device is switched off.
RESET	Indicates the condition which causes the device to restart: it is as if the device were to be switched off and back on again.
SATA	Serial Advanced Technology Attachment is a computer interface used for hard disk connections. It is the evolution of the ATA (more well-known as IDE).
Stream	Audio/video dataflow transmitted by a source.
TBD	Topic or functionality To Be Defined.
UMTS	Universal Mobile Telecommunications System.
Remote user	Indicates a user capable of communicating with the devices through a personal computer equipped with one of the device-compatible applications.

4 - TECHNICAL CHARACTERISTICS

The device consists of a VDS main board, based on an X86 type processor at 1.3 GHz, upon which are installed one or more 4 or 8-channel video capture cards capable of performing hardware video-stream compression. The application developed by Sicep is based on the Linux operating system.
The product's main characteristics are listed below.

4.1- ELECTRICAL CHARACTERISTICS

The following characteristics refer to the device as equipped with a hard disk.

Input power supply:	· 110Vac 60Hz / 230Vac 50Hz. 11-14Vcc from battery
Consumption with 1 Hard disk	· VDS-4: 50W VDS-8: 57W VDS-12: 65W VDS-16: 70W
Backup battery:	· 12V rechargeable sealed lead-acid battery (optional), maximum capacity 7.5 Ah.
12 Vcc Outlet:	· Protected outlet for auxiliary devices with resettable fuse capable of dispensing 200 mA at 13.8V (in absence of mains power, this outlet provides the rated battery voltage).
Video Inputs:	· PAL or NTSC, 1Vpp 75Ω, 4 for VDS-4, 8 for VDS-8, 12 for VDS-12, 16 for VDS-16
Audio Inputs:	· 1 line Vpp, 4 for VDS-4, 8 for VDS-8, 12 for VDS-12, 16 for VDS-16.
Digital Inputs:	· 4 Enabled referred to GND for alarms, programmable to generate alarms in the event of opening, closing or status change, associable with video or logical alarms. 100 KΩ Input pull-up.
Activation input:	· Referred to GND with the function of activating and deactivating the system. 100 KΩ Input pull-up.
Mouse/Keyboard interface:	· PS2 and USB types.
Video Outputs:	· 1 VGA (1024x768) for real-time viewing, replay consultation and configuration. · 1 CVBS, on an RCA connector, programmable in PAL or NTSC formats, replicates the images present on the VGA. · 1 S-Video, replicates the images present on the VGA
Audio Output:	· 1Vpp, 1x recording playback.
Digital Outputs:	· 4 Open Collector type 100mA max; closes to reference if controlled; programmable as static or monostable.
Activation Output:	· Open Collector type 100mA max; closes to reference if controlled; can be used to directly command the activation input.
Alarm Output:	· Open Collector type 100mA max; closes to reference if controlled in the event of alarm.
Communications ports:	· 1 10/100 Mbit Ethernet port on a RJ45 connector, max. 90m connection lengths. · 5 USB ports, of which one is frontal, for connecting to storage and/or communications devices. · 1 RS485 port for Speed-Dome control.

4.2- ENVIRONMENTAL CHARACTERISTICS

The devices are designed to be stored and to operate in closed environments with the following characteristics:

PARAMETER	OPERATIONAL	NON-OPERATIONAL
Temperature:	From 5 °C to +40 °C	From -20 °C to +60 °C
Thermal gradient:	Max 25°C per hour	
Relative humidity (non-condensing):	From 20% to 80%	From 5% to 95%
Altitude:	From -150 to +3000 m	From -150 to +12000 m
Protection rating:	IP20	

4.3- PHYSICAL CHARACTERISTICS

The devices' main physical characteristics are described below.

Weight:
- 6 Kg (13.23 lbs) max with 2 hard disks installed.

Dimensions:
- Height: 111 mm (4.4 in)
- Width: 341 mm (13.4 in)
- Depth: 311 mm (12.4 in)

4.4- FUNCTIONAL CHARACTERISTICS

Architecture:
- X86 main board with hardware compression cards.

Operating system:
- Linux

Video resolution:
- PAL: 4CIF (704x576), DCIF (528x384), 2CIF (704x288), CIF (352x288), QCIF (176x144)
- NTSC: 4CIF (704x480), DCIF (528x320), 2CIF (704x240), CIF (352x240), QCIF (176x120)

Video compression algorithm:
- H.264

Audio compression algorithm:
- OggVorbis standard

Fps per Video camera:
- 25/30 fps for 2 channels in 4CIF format and 2 cannels in CIF format for PAL/NTSC format (for a group of 4 channels)
- 25/30 fps for channel in DCIF format for PAL/NTSC format
- 25/30 fps for channel in 2CIF format for PAL/NTSC format
- 25/30 fps for channel in CIF format for PAL/NTSC format

Date and time maintenance:
- Internal clock with backup lithium battery.

Communication:
- 10/100 Mbit Ethernet interface.
- 3G modem optional (GPRS, EDGE, UMTS, HSDPA, HSUPA).
- Static or dynamic IP accessibility.

Video loss:
- Can be independently enabled on each video input.

Remote controls:
- Implemented through the digital outputs and can be configured as either monostable or static for remote activation.

User interface:
- Local: With monitor, mouse and keyboard or supplied remote control.
- Remote: With VDSClient software installed on a Personal Computer or VDSMobile installed on a handheld PC.

Protection:
- Local user interface: Username and password authentication required in order to access the system as either a "User" or "installer".
- VDSClient remote user interface: Device identification code, as well as username and password authentication, required in order to access the system as either a "User", "Installer" or “Watchman”. Users of level “Watchman” can only access to realtime video.
- VDSMobile remote user interface: Device identification code and associated MVS password required for access.

- MvsNET or DATA9000MVS: Device identification code and associated MVS password required for access.

Device monitoring:
- The following checks are performed:
  - 230/110 Vac mains power enabled
  - Battery charge status to ensure functionality in the case of power loss or power supply malfunction
  - CPU temperature check.
  - Proper device function: hard disk, VDS/P card, video capture card.

Alarm notification:
- Is possible by means of Sicep centralization software. Sending of email with the possibility of attaching alarm-related images or videos.

Storage:
- Video flow and event recording on a SATA type hard disk. Possibility of using up to 2 hard disks of 2 TByte each.

Data exporting:
- To USB flash drive or external USB hard disk, both formatted as FAT32.

Image security:
- Superimposed semi-transparent logo.

Speed Dome control:
- Through multi-protocol RS485 interface:
  - Pelco D
  - Pelco P
  - Philips

Motion detector:
- For internal environments, can be configured for each individual video camera with 8 distinct areas available by morphology and parameters.

Maintenance:
- Local with monitor, mouse and keyboard or remote control.
- Remote through a personal computer with VDSClient software installed.

Updating:
- From remote through SicepMVC.

Compatibility:
- MVS.Net and DATA9000MVS centralization systems, SicepMVC for updating, VDSClient for remote connection from a PC and VDSMobile for remote connection from a handheld PC.

5 - BECOMING FAMILIAR WITH THE DEVICE

This chapter describes the procedures to be followed in order to ensure the device's proper function.

5.1- DELIVERY OF THE DEVICE

Perform a visual check in order to verify the integrity of the packaging and check for any eventual damage resulting from transport; the devices are carefully checked and packed at the SICEP facility. If the package is damaged upon delivery, notify the courier immediately. Sicep shall bear responsibility for damages caused during transport (refer to the warranty conditions).
The packaging consists in a cardboard box containing the following items:

- 1 VDS device;
- An adaptor cable, which transforms a DB15 connector into a BNC connector, as an alternative connection for the device's audio and video inputs. The number of cables contained within the package will depend on the model:
  - 1 for VDS-4
  - 2 for VDS-8
  - 3 for VDS-12
  - 4 for VDS-16
- 1 box labelled VDS-TEL which contains one remote control and two 1.5V AAA batteries
- 1 power cable for use with the mains power supply
- 1 power cable for use with a battery
- This user and maintenance manual;
- 1 CD-ROM containing this manual in electronic format as well as the device's management applications.

5.2- STORAGE

Store the device in its original packaging under the conditions described in the "Environmental Conditions" section.
Maximum storage time: 1 year.

5.3- SHIPPING THE DEVICE

In the event that the device should need to be returned to SICEP for repair, carefully package it in its original packaging, if possible, and attach the duly-completed repair request form, taking care to describe, in detail, the defect encountered.

5.4- ARCHITECTURE

One of the main features of the VDS product range is their modularity. There are 4 product models which are differentiated by their number of video inputs:

- VDS-4: 4 video inputs
- VDS-8: 8 video inputs
- VDS-12: 12 video inputs
- VDS-16: 16 video inputs

It is possible to increase the number of channels, by adding or replacing video capture cards, up to a maximum of 16 audio and video inputs.

The device's architecture is described below:

- X86 type main board in Mini-Itx format
- VDS/P auxiliary logic board, integrated digital I/O, RS485 serial port and monitoring devices.
- PCI riser card
- PCI video capture and compression card(s) with 4 and/or 8 channels, based on the model
- ATX power supply
- AL-4W mains power supply
- Anterior LED indicators for visual operations signaling
- Rear audio/video inputs
- 1 or 2 SATA hard disks
- 1 IDE flash disk containing the operating system and the Sicep proprietary application

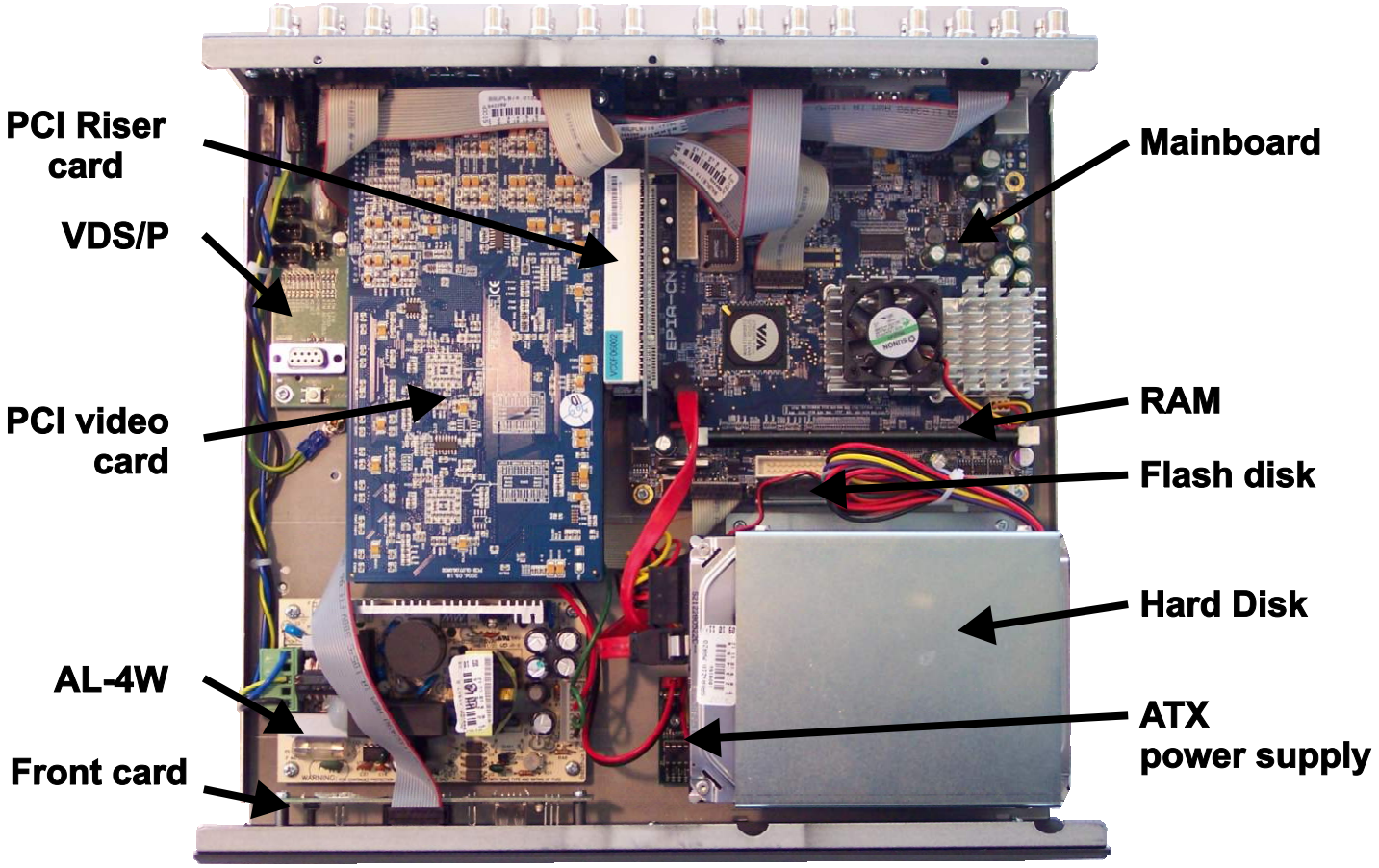
WARNING

ATTENTION:

In order to upgrade to a higher number of video inputs it may be necessary, besides adding a new card, to replace one of the video capture cards:

- *Upgrading from 4 to 16 inputs requires the replacement of the 4-input card with an 8-input card, as well as the installation of an additional 8-input card.*
- *Upgrading from 12 to 16 inputs requires the replacement of the 4-input card with an 8-input card.*

For purely descriptive purposes, the figure shows the inside of the device in its complete configuration; the model in you possession may lack one or more of the components shown.



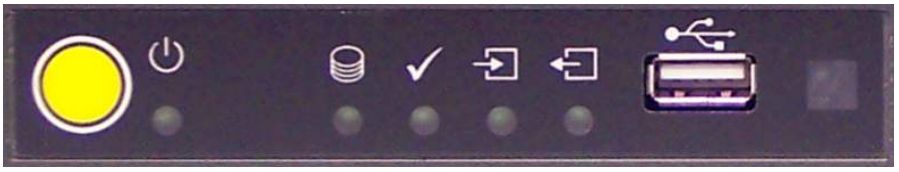
Externally, the device appears as shown in the following figure.

The rear portion of the device appears as follows.

Control panel

The VDS control panel contains the following:

- Power button for activating the device
- A USB port for connecting storage devices to which videos may be exported
- : when on, indicates that the main board is powered on for normal function
- : turns on when a hard disk is accessed
- : normally off, flashes when the VDS attempts to connect to a remote user and remains steadily on when the VDS is connected.
- : when blinking, indicates data being transmitted to a remote user
- : when blinking, indicates data being received from a remote user
- flashing simultaneously: Error signal, inspect using diagnostics.

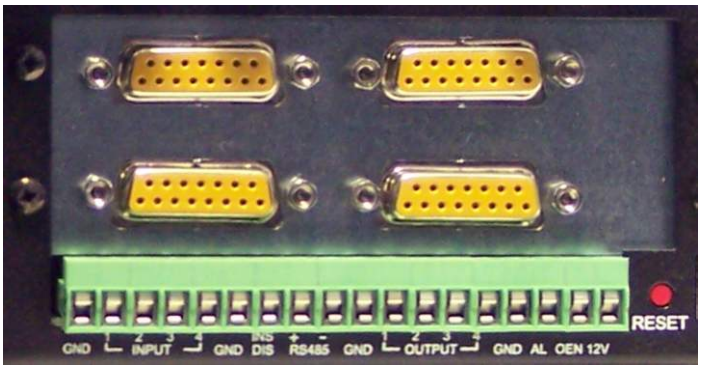


Rear connectors and controls

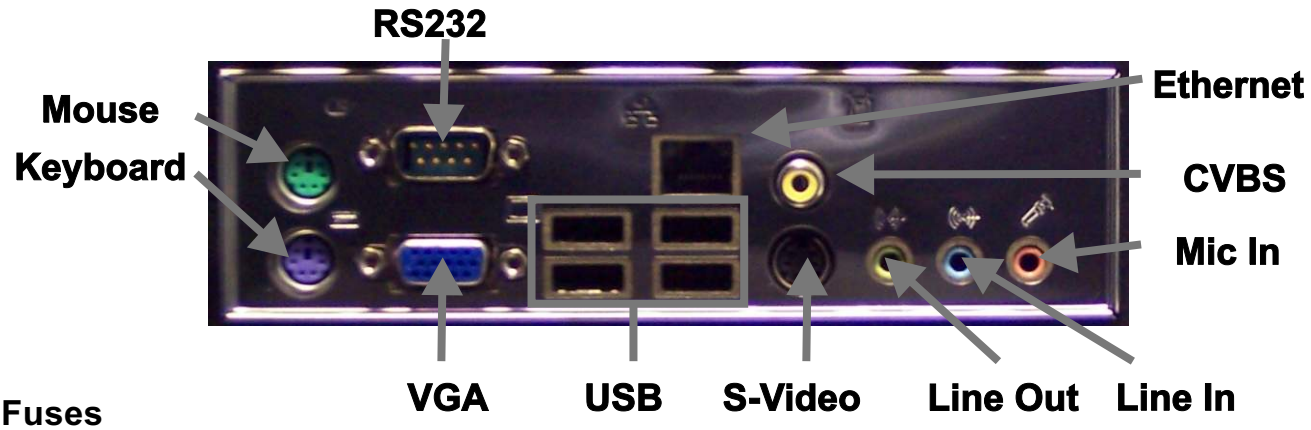
- Video Inputs
- Audio Inputs

- Removable terminal board with 18 positions numbered from left to right

N°	ID	Description
1	GND	Grounding reference
2	IN1	Digital input 1
3	IN2	Digital input 2
4	IN3	Digital input 3
5	IN4	Digital input 4
6	GND	Grounding reference
7	INS/DIS	Activation/deactivation input
8	485+	Serial RS485 + terminal
9	485-	Serial RS485 – terminal
10	GND	Grounding reference
11	OUT1	Digital output 1
12	OUT2	Digital output 2
13	OUT3	Digital output 3
14	OUT4	Digital output 4
15	GND	Grounding reference
16	ALARM	Digital alarm output
17	OEN	Activation/deactivation output
18	12V	Auxiliary power



- Device Reset button
- Power switch
- 230Vac mains power supply tray
- 12Vcc battery power supply connector



Fuses

The device contains 3 different fuses:

- X7 on the VDS/P card, 5x20 mm 5A rapid glass fuse
- F1 on ATX power supply, 15A mini-blade fuse
- FS1 on AL-4W mains power supply, 5x20 mm 4A rapid glass fuse

Refer to Appendix B "Special Operations" for a description of the fuse replacement operations.

5.5- INSTALLATION

Before proceeding with the installation, carefully check that the device has not been damaged. Follow the procedures described in the following sections for the proper use of the apparatus.

Equipment

There are two methods to configure the devices during the installation phase:

- Through a **local interface**, using the equipment listed below:
  - VGA monitor
  - PS/2 or USB keyboard and/or mouse.
- Through a **remote interface**, using the equipment listed below:
  - a Windows personal computer or notebook computer upon which the VDSClient application has been installed beforehand.
  - a **crossover** Ethernet network cable in the case of a direct PC-VDS connection
  - a **pin-to-pin** Ethernet network cable in the case of a connection through a switch

The device has the following factory default settings:

- **Device code:** 100
- **MVS password:** sicep
- **IP address:** 10.1.1.98
- **Username:** installatore
- **User password:** sicep

Precautions

Follow these guidelines before starting the installation.

DANGER:
Follow these guidelines before starting the installation.

WARNING:
Before beginning, make sure that the device is not connected to the power supply.

Selecting the installation location

For a proper installation, select the device's location considering that:

- It must respect the operational conditions described in the "Environmental Characteristics" section.
- It must guarantee a stable, horizontal support.
- In order to guarantee adequate ventilation, the device must be surrounded by 10 cm of free space on all of its sides, as well as above.
- Adequate space must be left behind the device for the cables.
- It must be dry and free of water, dust, vibrations, strong magnetic fields, heat sources and sudden temperature variations.
- In the case of the version with a 3G modem, a medium-high signal level must be present
- It must not be freely accessible by unauthorized persons

Installation procedure.

This procedure constitutes one possibility and does not purport to cover all possible cases; it describes the steps to be followed in the case of a fully configured device and must be integrated or reduced based on the various models and according to the specific needs of the user.

Basic installation

1. Connect the video signal cables which are connected to the video cameras to the video inputs.
2. Connect any eventual audio cables.
3. Connect any eventual sensors with wires to the terminals of the Enabled.
4. Connect any eventual user connections to the terminals of the digital inputs.
5. Connect any eventual Speed-Dome video cameras to the RS485 interface.

Continue to configure the device according to the procedures described in the following paragraphs.

The VDS has BNC and RCA connectors for connecting the audio and video cables. A DB15-BNC adapter cable, which can also be useful for performing a LOOP connection with another audio/video device, is also supplied; in this case the device in question must have an input impedance that does not interfere with that of the VDS, which is 75 ohms and non-modifiable.

Upon final testing at the Sicep facility, the device is configured with its default values. The installer must customize the installation by programming the parameters relative to the recording and communication methods. For this purpose, the installer must refer to the subsequent chapters regarding device's functionalities as well as the instructions for setting the parameters.

The connection of the VDS device to an existing Ethernet network requires an IP address to be set for the VDS that is compatible with the network upon which it is operating. This can be configured through either a local interface or through a remote interface but, in the latter case, there must be a direct connection, using a crossover Ethernet cable, between the personal computer with the VDSClient software installed and the VDS device itself.

WARNING

WARNING:
The installation of a VDS device with its default factory settings on a network with an incorrect IP address could cause malfunctions within the network itself.

Configuration through a local interface

1. In the case of a PS/2 mouse and a PS/2 keyboard, connect the mouse and keyboard to the PS/2 connectors. In the case of a USB mouse and keyboard, connect these to any two of the five available USB ports.
2. Connect the VGA monitor to the port at the rear of the device.
3. Connect the VDS to the mains power supply.
4. Turn the main power switch to its ON (I) position.
5. Check that the device turns on properly. In the event that the device has not yet turned on, refer to the MAINTENANCE section in order to identify and resolve the problem. If necessary, press the power button to activate the device.
6. Wait for the main screen of the local interface to appear on the monitor.

Configuration through a remote interface

1. Connect the VDS device directly to the PC with the VDSClient software installed using a crossover Ethernet cable. For more information, refer to Appendix A "Connection Typologies"
2. Turn the main power switch to its ON (I) position.
3. Check that the device turns on properly. In the event that the device has not yet turned on, refer to the MAINTENANCE section in order to identify and resolve the problem. If necessary, press the power button to activate the device.
4. Set an IP address on the PC that is compatible with the default address set on the device, for example 10.1.1.99.
5. Start the VDSClient program on the Personal Computer and use the factory settings provided at the beginning of the chapter to login.
6. Wait for the main screen of the remote interface to appear on the monitor.

Completing the installation

1. Perform any necessary modifications. Appendix E "Quick Start" provides a procedure for setting up a typical configuration.
2. Disconnect the crossover Ethernet cable, if present, and connect the device to the Ethernet network using a normal pin-to-pin Ethernet cable.
3. Install and/or configure any eventual clients: VDSClient, MvsNET etc.

4. Configure the accessory devices: router, etc.

WARNING

WARNING!:
On notebook computers, the disconnection of the network cable can block the functioning of the network interface itself. Assuming that a Windows operating system is in use, this function can be restored by disabling and immediately re-activating the network connection. Refer to the Windows user manual for further information.

Installation verification procedure.

The verification procedure requires knowledge of the device's functionalities and the features of the interface. See the following chapters for more information on this topic.
After having completed the installation and set the operating parameters, verify that the installation has been properly performed by following the procedure described below.

- Access the interface in local or remote mode through VDSClient
- Check the current time of the device and correct it if necessary by accessing the configuration.
- Check the quality of the signal and the positioning of the video cameras.
- Check and modify the video parameters if necessary.
- Perform a cleanup of the hard disk, if necessary, then wait a few minutes and check for new entries in the "Recordings Archive"
- From DATA9000MVS or MVSNet, perform a real-time video query on all of the available carriers and verify that the device responds correctly with dates and times that are consistent with the correct current time.
- If a recipient is available, perform a transmission test by simulating an alarm or by pressing the Test button on the "Recipients" screen.

WARNING

WARNING:
With the default factory settings, the device is not configured for 24-hour recording. If necessary, this can be activated for each video camera in the CONFIGURATION RECORDING section.

6 - FUNCTIONALITIES

This chapter describes the device's functionalities.

6.1- GENERAL CONSIDERATIONS

The device is designed for the capture, compression, recording and sending of images from analog cameras in color or in B/W. These images are processed through a type H264 compression algorithm in order to reduce the amount of data to be transmitted and the occupation of space on the storage devices.

WARNING

WARNING:
The presence of at least 1 hard disk is fundamental in order for the VDS device to function.

The device has the same number of audio inputs as is does video inputs. For this reason, thanks to the functionality of the H264 encoder, every H264 stream can be integrated with an audio track in OggVorbis format.
The device is also equipped with digital inputs, digital outputs and communication ports through which it can interact with the external environment. Each device can support up to 2 hard disks.
The management software is based on Linux and the product therefore benefits from all the unique stability and security features of this now widely-used operating system.
The following paragraphs describe the device's image capture methods, its functionality in different operating states as well as its operating modes.

6.2- H264 COMPRESSION

Starting with the video camera images, the compression cards produce a type H264 stream. This stream organizes the videos into a Group of Pictures (GOP) sequence. Each GOP contains frames which can be of three different types:

- Type I frames, also known as key frames. Each GOP starts with an I frame, which contains all the information necessary for its decoding, regardless of the other frames. This is the largest and least compressed frame.
- Type P frames. These are frames which are encoded as a difference from the preceding I or P frame and can therefore only be decoded if the previous I or P frame is available. Type P frames are smaller than I frames.
- Type B frames. These are encoded using the information contained in the previous I or P frame and the subsequent I or P frame. B frames can only be properly decoded if the previous and subsequent I or P frames are available. Type B frames are even smaller than P frames.

A sequence of frames which is quite frequent in this type of encoding is, for example, the following:
IPBBPBBPBBP…PBBPI

The number of frames contained in a GOP is specified with the Key frame parameter.

6.3- RECORDING

The images available at each of the device's video inputs can be recorded based on different methods, which can be configured independently for each input.
There are three possible recording methods for each of the device's video inputs:

- **24 hour**: With which the device records continuously at the selected video inputs
- **Event-based**: The device only records following a user-defined event, such as an input variation, video loss or motion detector signal. A pre-alarm video duration, as well as an alarm video duration, can be configured for each of these events.
- **Time-based**: The device only records based on a daily schedule set by the user.

24 hour recording

24 hour recording takes place regardless of alarm events.

Event-based recording

Event-based recording takes place when an alarm event occurs, in which case the event type is stored and, based on the configuration, a pre-alarm video and an alarm video are generated.

Pre-alarm video

The pre-alarm video is made up the images acquired before an alarm event. In order for this video to be available, it must be previously associated with one of the possible alarm causes.

The alarm causes include:

- Logical input status variations
- Video input signal absences
- Motion Detector Signals

In order to capture pre-alarm video at least one of the following operations must be performed:

- associate a pre-alarm video with one or more logical inputs
- activate the video loss or motion detector on one or more video cameras

NOTICE

NOTE. *With regards to the inputs, any **pre-alarm** video can be associated with any video input, while the activation of an alarm function, such as video loss or motion detection, on a video camera will only result in video being recorded from that specific video camera.*

Alarm video

The alarm video is made up the images acquired following an alarm event. When an alarm occurs, the device performs the following operations:

- It captures video associated with the cause of the alarm based on the method foreseen by its configuration
- Recording to the hard disk
- Sending of the video to a remote recipient

NOTICE

NOTE. *With regards to the inputs, any **alarm** video can be associated with any video input, while the activation of an alarm function, such as video loss or motion detection, on a video camera will only result in video being recorded from that specific video camera.*

Time-based recording

The device only records during the time frames set by the user. There are 4 groups made up of 4 slots which can be configured freely. Each video camera can be associated with a group of time slots and will only record at the scheduled times. If the camera is only configured to record while the system is on then recording will only take place during the time frames in which the system is activated. If, on the other hand, the camera is configured to record even when the system is off, it will only take the specified time frames into consideration.

6.4- MEANS OF COMMUNICATION

In order to communicate with external devices, the device is equipped with a 10/100 fast Ethernet interface and 4 USB ports.
The Ethernet interface allows for the VDS to be connected to a local area network through a hub, a switch or, using a router, to an ADSL line.

NOTICE

NOTE: *The VDS device can be connected directly to a personal computer or notebook computer using a crossover type Ethernet cable.*

The USB ports enable the VDS to use an external modem for communication over a 3G network (GPRS, EDGE, UMTS, HSDPA, HSUPA). Such modems are generally provided by the network's operator. For the models which support this functionality, see the 3G Modem configuration on VDS page or contact Sicep.

Through these interfaces, the VDS can respond to remote queries and send alarm notifications to any eventual recipients.

NOTICE

NOTE: *If the communications device uses a TCP/IP protocol, simultaneous communications can take place with various remote clients through the same device. This protocol is used when communicating over an Ethernet or internet network with 3G or ADSL communications devices. If, on the other hand, the communications devices are ISDN or PSTN typologies, simultaneous communications cannot take place with more than one remote client.*

Dynamic IP management

The VDS is capable of communicating over both a local area network or over the Internet. In the latter case, the connection may be either via ADSL lines or via 3G carriers (GPRS, EDGE, UMTS, HSDPA and HSUPA).
For communication over the internet, the VDS must be recognized on the network with a public IP address, which may be one of two types:

- static
- dynamic

The accessibility of a VDS through a static IP address is the easiest, but certainly not the cheapest method. For this reason, various mechanisms have been implemented for the use of the dynamic IP addresses which are normally provided by domestic operators.

A dynamic IP address can be managed in two ways:

- MvsNET Centers
- Commercial dynamic Dns servers

Dynamic IP addresses with MvsNET centers

This feature allows for one or more MVSNet centers to access the device whether the VDS device's installation uses a dynamic, public or private IP address.
This mechanism requires that the device maintain continuous communications with the center over a UDP protocol. Through the use of such communications, MVS can connect to the VDS device regardless of any changes to the device's IP address. If the device is located within a private network with an active NAT mechanism, this feature is essential in order to allow for the center to access the device at any time.
If this mechanism is enabled, the device maintains communications with all of the MvsNET type recipients which are configured in such a way so as to be accessible by all of the centers.

NOTICE

NOTE: *This characteristic even allows for communications over networks which do not provide the device with a public IP address to render it visible on the internet.*

Dynamic IP addresses with commercial Dns Servers

This service can be provided by various commercial servers which provide both free as well as paid services, including DynDNS, which is the most common.
The mechanism which is employed is the following: The server allows for a symbolic name to be assigned to the device, which is in turn associated with the device's own IP address. If the IP address of the device is changed during normal function, the device itself contacts the server in order to communicate the new IP address: Access to the device can then be performed by means of the symbolic name associated with it, which the server will then identify with the new corresponding IP address.

In order to use the service, do the following:

- Register on the selected server with a username and password
- Select the "Dynamic IP" service
- Create a name with which the device using the service will be recognized over the internet and assign one of the available domains to it.

EXAMPLE: If using DynDns, the VDS device number 5365 might be called vds5365.dynsys.org. For more information regarding the configuration refer to the website of the selected server. In order to function properly, various parameters must be set in the device's COMMUNICATIONS DYNAMIC IP section.

NOTICE

NOTE: *The functionality of the dynamic IP mechanism is linked to the stability of the DynDns server. Sicep S.p.A. shall therefore not be held responsible for any eventual lack of continuity in the server's indicated service. For proper function with a dynamic IP address, check the compatibility and settings of all the systems involved.*

Function over a 3G network

Function over a 3G network can take place in two different manners: 24 hour connection and wake-up connection. In the case of a 24 hour connection, the VDS device is permanently connected to the 3G network and the connection methods described in the previous "Dynamic IP Management" section remain valid. For this method of function, a contract guaranteeing unlimited connection time at a fixed cost must be stipulated with the network's operator.
In the case of a "Wake-Up" connection, the VDS device is not normally connected to the 3G network and the connection only takes place upon the receipt of a data call (ring) at the telephone number of the SIM card inserted within the VDS device's 3G modem.

NOTICE

NOTE: *The Wake Up connection can be performed using a PC with properly configured MVSNet software which is equipped with a GSM modem (SMS/ring).*
A fundamental requirement for the function of this type of mechanism is that the SIM card being used must be capable of answering both data and voice calls.

6.5- ACCESSING THE DEVICE

Access to the device can be performed through the local and/or remote interface.
Remote access to the device can be performed through the use of VDSClient, MVSNet, DATA9000MVS and VDSMobile software.

Access through a local interface

Access to the device in local mode only requires a monitor, a mouse and/or a keyboard. Alternatively, it is possible to use the supplied remote control along with a monitor.

In either case, the following procedure must be followed:

- Connect the monitor to the device's mother board
- If necessary, connect a mouse and/or keyboard to the device's mother board
- Press the power button on the front of the device
- After about 90 seconds, which are required for the operating system to load, the main screen shown below will appear on the screen.

Main screen

NOTICE

NOTE: *In order to be able to operate locally using a PS2-type mouse and keyboard, these must first be connected before turning the device on. In the case of a USB-type mouse and keyboard, these can be connected even after the device has been turned on.*

Login

Access to the device's functionalities is protected by a two-level articulated authentication system:

- Access to the installer level: This type of access allows the user to modify the device's settings, the events archive and the recording's archive, as well as to view video in real time.
- Access to the user level: This type of access allows the user to view the events archive and the recording's archive, as well as to view video in real time.

NOTICE

NOTE: *Without a username and password, the user will only be able to view video in real time.*

If access to the installer level is performed, the user will be able to view the existing accounts and to create new ones, assigning the desired accessibility levels. By default the device comes configured with only one installer-level user, with the following access parameters:

- Username: installatore
- Password: sicep

NOTICE

NOTE: *The two-level articulated "User" and "Installer" access authentication system can be useful in cases where the technician installing the device wants to retain the exclusive possibility to modify the device's configuration, while guaranteeing users the possibility to access the device for the purpose of recovering video recordings.*

WARNING

WARNING:

Once the user has logged in, if he/she does not interact with the VDS device for more than 5 minutes, the device will display the main screen once again.

Access through a remote VDSClient interface

The device continuously awaits any remote user queries through the available communications devices. A Windows personal computer, upon which the VDSClient application has been installed beforehand, is required in order to access the device in remote mode.
The VDSClient software provides the Personal Computer with the same graphic interface as the local management software, thereby allowing for total control of the device from the remote workstation.
The VDSClient program can be installed on any personal computer which meets the following system requirements:

- 2.6GHz Pentium4 processor or higher
- 256Mbyte RAM or higher
- Ethernet interface
- Windows 2k, XP or Vista operating system

The following procedure must be performed in order to connect through a remote client:

- Connect the PC with VDSClient installed to the network
- Configure the network connection of the PC
- Start the VDSClient software and wait for the appearance of the dialogue box requesting the user to select the device to connect to
- Insert the access parameters for a "user", "installer" or "watchman" account, consisting of a username and password (factory defaults - username: installatore - password: sicep)

- Insert the device's MVS code (factory default: 100)
- Insert the device's IP address (factory default: 10.1.1.98) or, if DNS dynamic IP management is enabled, insert the symbolic name assigned to the VDS device.
- Press "Login" and wait for the main screen to load.

Once the connection has been successfully established, the main screen described above will appear, providing the possibility for the user to view real time images or else to perform a new login using the procedure described above.

NOTICE

NOTE: *In remote mode, the user has the possibility of logging in as a "user", an "installer" and even as a "watchman". This access level only allows for the user to view real time images and does not allow for a Login to be performed.*

NOTICE

NOTE: *After logging in through the VDSClient software, the real time images will not be displayed until the user selects a video camera, a quad or an octal.*

WARNING

WARNING:
Once the user has logged in, if he/she does not interact with the VDS device for more than 5 minutes, the software will display the main screen once again.

Access through a remote VDSMobile interface

The VDSMobile software, developed by Sicep, is fundamental for guaranteeing full video control to users of handheld devices with the Windows Mobile operating system installed. VDSMobile allows users to view real time video, to control any installed Speed-Dome devices, to control the outputs, as well as to view the status of the digital inputs and the active channels.

NOTICE

NOTE: *For a complete description, please refer to the manual of the VDSMobile software.*

Remote access through Sicep centralization software

In order to access the device through the Sicep centers, the user must be in possession of a MVSNet client version 1.00 1538 or later or else a DATA9000MVS client version 1.48e or later. DATA9000MVS software must be installed in conjunction with the MvsVDS video expansion software for VDS.

The following parameters are required in order to access the device:

- The device's MVS code (factory default: 100)
- The device's MVS password (factory default: sicep)
- The device's IP address (factory default: 10.1.1.98)

MvsNET Clients

The MvsNET software allows for the following operations to be performed:

- Real time video viewing from 1, 4, 8 or 16 video cameras
- Alarm notice reception with or without relative videos
- Archived video examination
- Device input and active channel status viewing
- Output controlling and device activation or deactivation
- Manual or automatic querying at scheduled times

- Speed-Dome video camera control from a remote workstation

For a detailed description of the functionalities of the MvsNET client software, please refer to the relative documentation.

DATA9000MVS Clients

The DATA9000MVS software allows for the following operations to be performed:

- Real time video viewing from 1, 4, 8 or 16 video cameras
- Alarm notice reception with or without relative videos
- Archived video examination
- Device input and active channel status viewing
- Output controlling and device activation or deactivation
- Manual or automatic querying at scheduled times

For a detailed description of the functionalities of the DATA9000MVS client software, please refer to the relative documentation.

Multiuser functionality

The VDS device allows for simultaneous access by multiple users. Access is guaranteed for 1 local user together with a maximum of 8 additional remote users. The remote users can even be connected through different client software. The only important factor is the number of simultaneous connections in progress.
Each connected user, whether local or remote, can perform the following operations at the same time as the others:

- Real time video viewing, through:
  - The local interface
  - VDSClient
  - MvsNET
  - DATA9000MVS
  - VDSMobile
- Check the archived video, through:
  - The local interface
  - VDSClient software
  - MvsNET software
  - DATA9000MVS software.

Even if there are 8 remote users simultaneously connected, as well as one user logged on locally, the VDS is still capable of making a connection to a recipient in order to report any eventual alarms.

Real time video

It is possible to access the device remotely or locally at any time and the application's main screen will provide a live view from any video camera or else from a combination of video cameras through a quad, octal or hexal representation. A "full screen" mode is also available, by which the entire screen will display the live view from the video camera or from the current composition of video cameras.
It is also possible to configure the device in such a way so that a certain time of inactivity on behalf of the operator will activate one of the two modes.

- "**Blank screen**" mode, which blacks out the real time video on the main screen in order to avoid useless consumption of system resources.
- "**Cyclical**" mode which allows for the cyclical individual or multi-view display of a series of views from various video cameras.

In both cases, the user just has to press any button on the keyboard or on the mouse to reactivate the normal real time view. The time of inactivity can be set by the user from the device's configuration.

NOTICE

NOTE *The "cyclical" and "blank screen" functions apply to the local interface.*

Recordings and events archive

The user can view the recordings relative to any video camera, both locally and remotely, at any time, regardless of the system's status. The device continues to record while the user is consulting the recordings archive.
In addition to the recordings, the local or remote user can, at any time, obtain a list of events recorded by the device during a specified time frame.

Audio

As each available video input also has a relative audio input, the VDS device is capable of inserting an audio track into each video recording.
If audio recording has been enabled then it is even possible to listen to the relative audio tracks while viewing recordings in local mode (Recordings Archive screen).

NOTICE

NOTE: *It is not possible to listen to the audio while viewing live video in local mode.*

It is even possible to play the audio tracks which are present within the recordings remotely, both with MVSNet as well as with VDSClient; In both cases, given the latency of the data's arrival, audio playback can not take place while the recordings are being downloaded, but only once the download has been completed, or rather, once the file has been saved.
The MVSNet software automatically saves the video/audio recordings within the archive when downloaded. In contrast, the VDSClient software only saves files when the export function is used.

6.6- RECIPIENTS

If the device detects an alarm condition, is capable of independently attempting to connect to the intended recipients using the available communications devices. Once connected, it sends the pre-alarm and alarm videos relative to the event that triggered the alarm.

NOTICE

NOTE: *Alarm notifications can only be received by recipients who have the MvsNET or DATA9000MVS software installed on their computers.*

Up to 4 recipients can be specified; in order for the device to attempt connecting to one of these, the following parameters must be specified:

- the communications device to be used, currently only TCP/IP typologies
- the recipient's IP address
- the number of attempts to perform for the specified recipient
- the alarms notification policy

The alarms notification policy determines whether to send the notification to only a single recipient or to all of the available recipients. If sending to only a single recipient, once an alarm occurs the device will attempt to connect to the first recipient; if the first attempt fails, it will try again based on the preset number of attempts. If all of the attempts fail, the device moves on to the next recipient and continues in this manner until at least one notification has been sent or until it has exhausted

the list of available recipients.
If a connection is established, the device first transmits the alarm signal to the recipient and then sends the pre-alarm and alarm videos, if foreseen by the configuration.
If the alarms notification policy is configured to send notifications to all of the available recipients, it will do so regardless of the results of each attempt.
Once the transmission has been completed, the device stays connected for a specified amount of "waiting" time, during which it remains available to respond to any queries on behalf of the recipient. The "waiting" time is fixed at 30 seconds.

6.7- E-MAIL

In the event of an alarm, the device is capable of sending a notification message to four e-mail addresses. If the type of alarm prescribes it, and if the option is configured, either the image relative to the moment of the alarm and the associated video camera, or else the alarm video itself, will be attached to the messages.
In order for the e-mail notifications to be sent, an internet connection managed by a properly configured router must be available.

NOTICE

NOTE: *In order for the e-mail notifications to be sent, the router which manages the internet connection must allow for outgoing connections from port 25 to any e-mail address.*

6.8- DIGITAL INPUTS

The digital inputs which are available upon the device include:
- 1 input for the activation/deactivation of the device.
- 4 logical inputs that can be equipped with sensors which can be useful for sending traditional alarm notifications such as theft, robbery and fire.

Remote users can query the device and view the status of the digital inputs at any time.

Logical Inputs

The logical inputs, which can be identified by the silkscreened INPUT label on the rear of the VDS device, allow for the device to be connected to an equal number of sensors. If these sensors are enabled, they can activate the device's alarm status.

The inputs can be configured in various modes:
- Type: VIDEO, LOGICAL, in order to generate alarms with or without associated videos
- Alarm enabling: ON, OFF, ON/OFF, to generate alarms in the event of input opening alone, input closing alone or in the event of both input opening and closing
- Send alarm notification: YES, NO, in order to send a notification to a remote recipient in the event of an alarm.
- Only if activated: YES, NO, to generate alarms even if the system if deactivated.

If the input is a VIDEO type, it can be associated with a pre-alarm video and an alarm video with relative durations in terms of time. If the input is a LOGICAL type, every alarm will produce a notification without an associated video. Each alarm is managed according to its programmed method: Recording to hard disk and/or transmission to a remote recipient.

Each digital input can be associated with a cyclical sequence which can be displayed on the local interface whenever an alarm event occurs at the input in question. Each digital input can have an independent cyclical sequence associated with it.

6.9- DIGITAL OUTPUTS

The available outputs can be used to control the relays. They are indicated by the OUTPUT label at the rear of the VDS device. The available digital outputs include:

- 1 activation output
- 1 alarm output
- 4 logical outputs

Local and remote users can view or control the status of the digital outputs at any time, with the exception of the alarm output. These outputs can be used for activating relays to connect local devices or for implementing remote commands.

Activation Output

The activation output, which is identified by the OEN label on the terminal board, is configured for the system's remote activation/deactivation. In order to use it, this output should be connected directly to the terminal board's activation input (EN/DIS).

NOTICE

NOTE. *In order to use this function from the MvsNET and DATA9000MVS software, output 99 must be configured as a static remote control channel.*

Alarm Output

The alarm output indicated by the "AL" label at the rear of the device is a monostable-type output that is activated automatically when the device goes into alarm status. This output remains active for an amount of time which can be specified by the user.

Logical Outputs

The functionality of the 4 logical outputs can be configured based on the following methods:

- **Static**: The output remains in controlled status based on its last command
- **Monostable**: The output, which is normally off, remains in an active status for the time prescribed by the "impulse duration" parameter.

6.10- VIDEO INPUTS

The various video signals which are present at the inputs are digitized and compressed in order to reduce the size of the recording. For each video input, the user can set various recording parameters, each of which contribute to what amounts to a compromise between video compression and quality.

NOTICE

NOTE. *The bit rate parameter can be modified in order to reduce the transmission times of the images as well as the space required for saving the video to the hard disk.*

The video inputs can also be used to generate alarms. Through elaborations performed upon the images, it is possible to generate two types of alarms:

- Motion Detector alarms
- Video absence alarms

If any of the above alarms are enabled, they will be automatically saved to the hard disk and pre-alarm and alarm videos will be generated. Their durations and notification methods are respectively defined by the "Pre-alarm Time", "Alarm Time" and "Send Alarm Notification" parameters.

Motion Detector

The VDS device uses a video image elaboration technology which is capable of implementing an automatic movement detection system called Motion Detection. The use of this functionality is foreseen for indoor environments, but does not exclude the possibility, in special cases to be defined at the installer's discretion, to use it in outdoor environments as well.

WARNING

ATTENTION: *The use of Motion Detection is at the complete discretion of the installing technician as he/she is the only person with knowledge of the environment in which the device has been installed.*

Motion Detection can be activated on all of the video cameras, each of which has 8 sensitive rectangular areas that can be individually configured by size and position.
Motion Detection is based on lighting and color variations which result from people or objects moving within the sensitive areas. A "sensitivity" parameter, which determines whether a specific point of the area itself should be considered as movement, can be set for each area. When the points of movement detected for a specific area exceed the value specified by the "threshold" parameter, the area and, consequentially, the device go into alarm status. The areas in alarm status are displayed in negative colors while those which are not in alarm status are displayed in normal colors.

NOTICE

NOTE: *The configuration and the display of the statuses of the Motion Detection system's areas can only be performed through the local interface.*

An area's alarm status immediately generates an alarm status for the Motion Detection system and, therefore, for the device as well.

For special purposes, it is possible to establish a sequence of areas which must go into alarm status individually before generating an actual Motion Detector alarm: In this case an alarm is generated if, and only if, all of the partitions in the preset sequence go into alarm status in the right order within the set time.
The Motion Detector can be configured to generate alarms only while the system is activated or else while it is deactivated as well.

Configuring the Motion Detector for an area

The procedure for configuring the Motion Detector is described below:

- From the "Motion Detector" screen, click on "Areas" to access the "Motion Detector Areas" screen.
- From the "Video Camera" field, select the video camera upon which you want to use Motion Detection.
- Set the number of areas to be created in the "No. Areas" field.
- Use the "Area" combo box to select the area to be configured.
- Choose the framing of the camera. This is a very important factor as this field mustn't be too wide or too narrow.
- Set the limit values which define the sides of the rectangular area: "top", "bottom", "left" and "right". The area should be constructed in such a way so as to avoid significant variations in brightness due to environmental causes and should highlight those variations which result from the events to be detected; it is preferable to set the areas on dark, less-detailed backgrounds and to avoid excessively bright or shiny surfaces.
- Create all of the required areas and then go back to the save menu.
- Press "Apply" to enable the latest settings and check that the rectangular area created frames the desired part of the image. If there are no other areas to be defined and if you do not want to configure a sequence of areas, return to the "Motion Detector" screen.
- Select the video camera upon which the areas have been configured.

- Enable motion detection on the video camera.
- If you want to use the areas which were previously defined on the video camera set "Selection" to "Areas" instead of "full screen".
- Use the "Threshold" parameter to set the threshold percentage of the area which must result as altered in order to generate an alarm.
- Set the area's sensitivity to 50 and simulate an intrusion. Continue to adjust the "sensitivity" and "threshold" parameters so that the motion detector's behavior complies with the following:
  - No areas should go into alarm status if there is no intrusion.
  - The passage of an intruder must activate the area's alarm status. The alarm detection can be verified on the image in the window at the upper left corner of the screen. In the event of a motion alarm, the rectangular area will be in negative colors.
- Set the "No. frames Fast movem." and "No. frames Slow movem," parameters. The first parameter, if not set to zero, enables detection only for movements which take place within that number of frames. The second parameter, if not set to zero, enables detection only for movements which last for at least that number of frames.
- Set the "Pre-alarm Time" and "Alarm Time" to be associated with the motion detector's alarm event.
- Set the "Timeout" parameter in order to prevent, within this time interval, additional motion detector alarm events on the same video camera following an initial motion detector event.

Configuring the Motion Detector for a sequence of areas

If, on the other hand, you want to use the alarm functionality on a sequence of areas:

- Return to the "Areas" screen to repeat the previous operations and configure at least two areas on a video camera.
- Enable the use of the sequence motion detector
- Set the number of areas to be used in the sequence
- Associate the areas with the various sequence elements by selecting the respective combo boxes.
- Afterwards, set the "Sequence time" field, or rather, the maximum time which can pass between the activation of the first and last areas of the sequence.

Video loss

If enabled, an alarm is generated whenever the video signal is lost at the corresponding input. Using this function automatically enables pre-alarm video capture on the video camera.

6.11- VIDEO OUTPUT

The video signal present at the VGA output of the main board can also be rendered available at an analogue output, whether composite-type video or S-Video, and this output may be connected to an analogue monitor for local surveillance.

NOTICE

NOTE: *The video signal available at the analogue outputs is the same as that at the VGA output.*

6.12- INTERNAL CHECKS

The device constantly performs checks in order to verify its proper functioning status. If any system anomaly is present, the device will log the event and, if foreseen by the device's configuration, will send a notification to a remote recipient equipped with MVSNet or DATA9000MVS software.
If the device is being powered by the battery in the absence of mains electrical power, the VDS will not be activated in order preserve the integrity of the hard disks, which could be damaged if started with insufficient power.
The checks which are performed are the following:

- **Loss of mains electrical power**: The device continuously monitors the voltage from the mains power supply, thus verifying both the presence of the 230/110Vac mains network as well as the integrity of the power supply. A timer is activated in the event an electrical power failure. If the mains power network has not been reactivated before the set time limit runs out, the device will send a notification to a remote recipient. The above holds true in the case that the system has a backup battery installed.
- **Battery drained**: The device continuously monitors the battery's power supply voltage; if it drops below 10.5 volts, a notification is sent to a remote recipient. The power-restored notification will only be sent, however, once the voltage level surpasses 12.5 volts. This check serves the purpose of verifying, in the absence of mains electrical power, the discharge status of an eventual backup battery, as well as its charge status once the mains electrical power has been restored.
- **Hard disk functionality check**: The system continuously monitors the functionality of the hard disk; if a problem is found, a "hard disk failure" notification will be sent to a remote recipient. If two hard disks are installed within the system and one of them malfunctions, the system will use the functioning disk to store the recordings.
- **Video capture cards check**: In order to capture and compress video, the device makes use of one or more cards which are dedicated to this function. In the event of malfunction, the event will be logged and a remote recipient will be notified.
- **Internal VDS/P multifunction card check**: The main board is internally connected to an auxiliary board. In the event of reduced or problematic communication between the two, a "malfunction" event will be signaled.
- **Monitoring of the device's internal temperatures**: The VDS device constantly monitors its internal temperatures. If these temperatures should exceed the preset thresholds, which can be configured by the installer, a "malfunction" event will be generated.

WARNING

WARNING:
The decreasing of the battery's voltage below 10.0 volts will cause the device to shut down; it will only turn itself back on once the mains power supply has been restored.

6.13- RECORDING AND EXPORTING

In its minimum configuration the system uses a single SATA-type hard disk for data storage; the device is nevertheless capable of handling up to 2 SATA hard disks of 2 TByte each.

NOTICE

NOTE: *If installing a new hard disk, the application will format the new hard disk automatically.*

Recording can take place either continuously or else only following alarm events; once the hard disk has been used beyond a certain capacity, the oldest recordings will be overwritten.
If two hard disks are present, two functioning modes will be available:

- **normal**: the two hard drives are used in an incremental manner, saving the data to one until its volume has been entirely filled and then continuing with the other. Once both hard disks have been entirely used, the oldest recordings will be overwritten.

- **raid**: If the two hard disks are of exactly the same model, they can be used in parallel so that the recordings will be saved both upon one, as well as upon the other, in an identical fashion. This functionality allows for the recordings to be available even in the event of one hard disk malfunctioning.

The recorded images can be exported to external devices equipped with USB interfaces, such as FAT32 formatted hard disks and USB flash drives.
The export of movies can be performed in H264 format or else in standard Sicep format. The recovery of recordings can also be performed through the MVSNet software; in this case, the movies will be stored in standard Sicep format.

H264 Format

H264 format is used when movies relative to individual video cameras are exported, both locally using a USB storage device as well as remotely using the VDSClient software. The video can be viewed using commercial software such as Windows Media Player and the like. The videos will be able to be viewed after installing the appropriate codecs, which come supplied with the VDS device.

Sicep Format

SICEP format is used when exporting from more than one video camera simultaneously; the resulting file will have the .mj extension and its contents can be displayed using the Video Browser function of the MVSNet software or else using the auxiliary software called MjViewer, which also comes supplied with the VDS device.
Exporting in Sicep file format allows for the subsequent simultaneous viewing of all of the video tracks present in the file.

6.14- IMAGE MARKING SYSTEM

In order to increase the security of recordings, each video recorded by the VDS device can be marked with a default logo which will be appear in a transparent form upon the images in order to prevent any forgery or tampering.

6.15- SPEED-DOME VIDEO CAMERAS

Each VDS device has a freely programmable multi-protocol RS485 interface for managing multiple Speed-Dome video cameras.
The standard functionalities are available:

- Left and right movement
- Up and down movement
- Zooming in and out

6.16- PRIVACY

The VDS device allows for the management of hard disk recording time limitations. In accordance with the privacy laws, which allow for the storage of recordings for only a limited time, a configurable mechanism has been implemented that allows for the recordings to be kept on the disk from a minimum of one day to a maximum of 240 days. The actual time which the images' will remain on the disk is nevertheless linked to the disk's capacity.

7 - USER INTERFACE

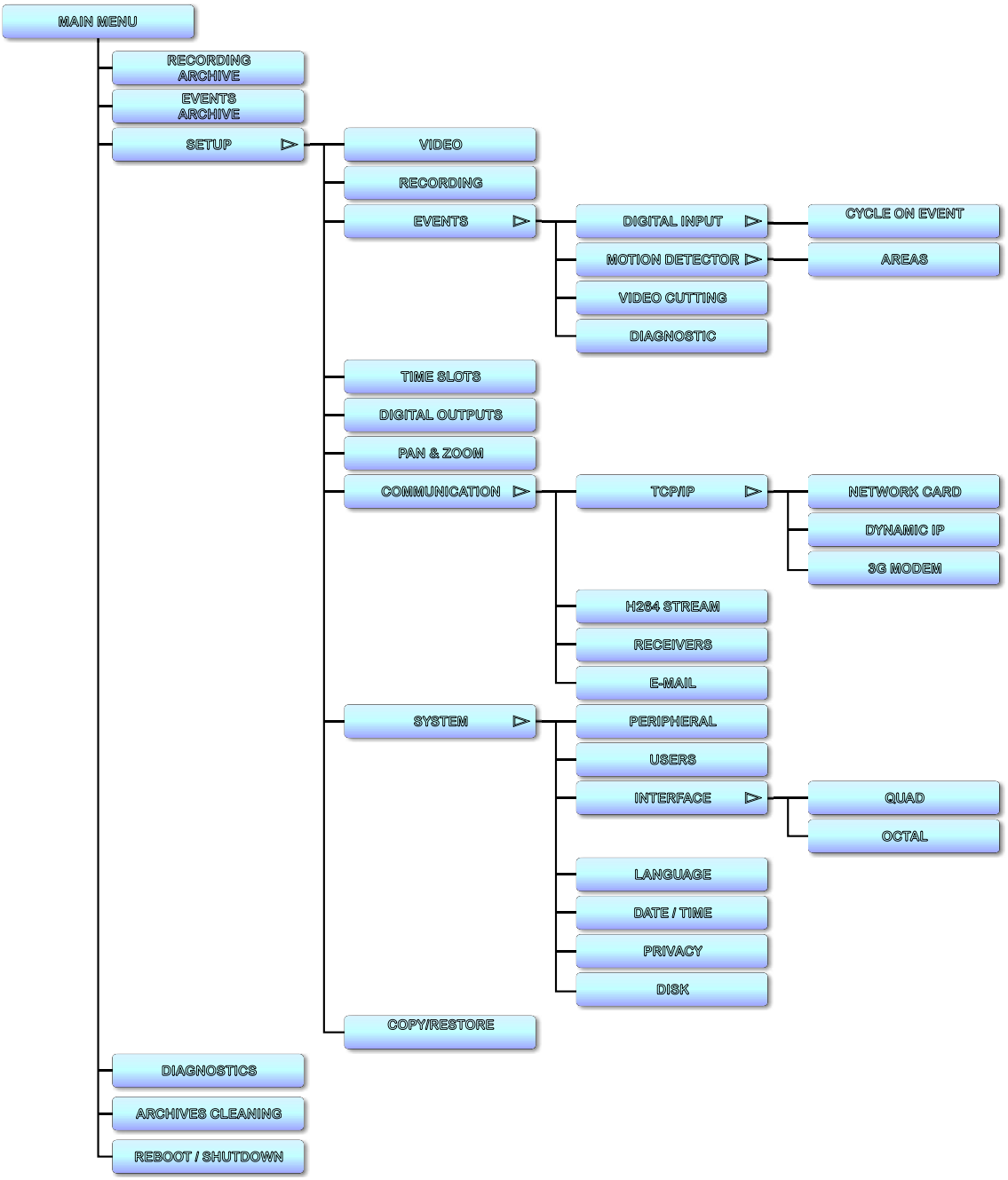
The user has access to the recordings and to the device's configuration through the graphical interface, which can be accessed in the following manners:

- **Local mode**: With a monitor, keyboard and mouse connected directly to the device or else with the remote control which comes supplied along with the VDS device.
- **Remote mode**: With a TCP/IP connection using a Windows personal computer, upon which the appropriate VDSClient software has been installed.

The user, whether connecting in remote or local mode, interacts with the device using the same graphical interface. The description of the interface below is valid for both modes and any eventual differences will be appropriately highlighted.

7.1- MENU TREE

The user interface is organized based on a menu tree with the following section hierarchy:



7.2- DESCRIPTION OF THE CONTROLS

The user can interact with the interface using:

- A keyboard and/or a mouse
- The supplied remote control

The types of controls which are normally found within the interface are the following:

-

Buttons: The use of a button initiates an operation or accesses a different screen
-

Scroll box: A field which can be scrolled through in order to make a selection from amongst a grouping of values
-

Text box: Allows the user to input alphanumeric text

Keyboard

With the keyboard, keys to be used in order to navigate within the interface are the following:

- "Tab", to pass from one control to the next within the active screen
- "Shift+Tab", to pass from one control to the previous within the active screen
- "⇧⇩ Arrows", to make selections with the scroll boxes
- "⇦⇧⇨⇩ Arrows" to move the cursor within a window. The windows are only present in the "Recordings Archive" and "Events" screens. In these screens, the user must first select the desired window using the Tab key, confirm the selection using the Enter key, and then maneuver within the window using the arrow keys.
- Press "Enter" to activate the selected control.
- Use the alphanumeric keyboard to insert text and use the backspace key to delete.

Mouse

Use the left mouse button to activate or select a desired control using the mouse.

If the user wants to edit a text field with the mouse alone, he/she must press the right mouse button in order to display a virtual keyboard from which the characters may be selected. Once the entry has been completed, simply press the "close" button.

For the user instructions for the remote control, please refer to the appropriate section of this manual.

7.3- MAIN SCREEN

The main screen of the user interface is shown below. This screen is the same for both local and remote access.

This screen displays real-time video from the video cameras connected to the device. The elements which make up the main screen are described below next to their reference numbers.

1	Viewing area for the video associated with the selected video camera.
2	Buttons for selecting the video camera to display in the relative viewing area
3	Button for displaying, if present, the next 4 (VDS-12) or 8 (VDS-16) video cameras.
4	Button for switching to full-screen mode.
5	Login button for switching to the login screen where a username and password can be inserted in order to access the recordings and/or configure the system's parameters.
6	Button for switching to multiple quad viewing mode. Pressing the button again allows for the cyclical selection of one of the four available quads.
7	Button for switching to multiple octal viewing mode. Pressing the button again allows for the cyclical selection of one of the two available octals.
8	Button for switching to multiple hexal viewing mode.
9	If the selected video camera is a Speed-Dome type, these buttons command its up, down, left and right movements.
10	If the selected video camera is a Speed-Dome type, these buttons command its zooming in and out functions.

NOTICE

NOTE: *In the case of remote access through VDSClient software, the default video display on the main screen is disabled. In order to view real time video, just select the desired camera, quad, octal or hexal by pressing the buttons on the right side of the screen.*

7.4- MAIN MENU

To access the main menu, press the login button on the main screen insert the access data when prompted.

NOTICE

NOTE: *The access data for the default device-access account are the following: Username = "installatore" Password = "sicep"*

After access has been completed successfully, the "Main Menu" screen shown below will appear on the display.

Main menu

If an "Installer" type access has been performed, the main screen will also display the following menu items:

- Recordings archive
- Events archive
- Configuration
- Diagnostics
- Archive cleanup
- Restart/shutdown
- Back

If a "User" type access has been performed, the main screen will only display the following menu items:

- Recordings archive
- Events archive
- Back

The individual menu items will be analyzed in the following chapters.

7.5- RECORDINGS ARCHIVE

On this screen the user can review and eventually export the video recordings found on the hard disk. The status of the recordings is displayed on a grid with the time as the horizontal axis and the video cameras as the vertical axis.
The time axis can be displayed based on various zoom levels: months, days, hours and minutes.
A minute is split into two blocks of 30 seconds. If during a certain period of time, depending on the zoom level, there are recordings present for a specific video camera, the corresponding position on the grid will be colored blue.

Recordings archive

The following elements can be found on the screen.

From - To (dd-mm-yyyy):
Use these fields to select the day or days for which to export the recordings.

From - To (hh:mm):
Use these fields to select the start and end times for the recordings to be exported.

Format:
Use this field to select the exported file format: H264 compression format or standard Sicep format.

Export:
Initiates the export operation for the selected video

Clear USB flash drive:
To eliminate all of the contents of the USB device connected to the VDS in order to free up the space required for the files to be exported.

Zoom +/-:
To switch the video display, based on the desired time frame, between months, days, hours and minutes.

Scroll ahead one frame

Scroll back one frame

Increase playback speed

Decrease playback speed

The controls identified by a number on the image are described below:

1	The video is shown in this area.
2	Starts video playback.
3	Pauses playback.
4	Stops playback.
5	Decreases the audio volume of the video in progress.
6	Increases the audio volume of the video in progress.
7	Current time data. With the time zoomed in to maximum, this position will show: dd/mm/yyyy - hh.
8	The up and down arrows on the left select the group of video cameras: 1..8, 9..16.
9	The recordings display grid with the time as the horizontal axis and the video cameras as the vertical axis.
10	Switches to the previous month, day or hour
11	Switches to the next month, day or hour

NOTICE

NOTE: *In order to display the recordings, select the desired block from the grid (9) and press the start playback button (2).*

Video playback

Recorded videos can be played back from the recordings archive screen. Below are described the operations to be performed starting from the grid that displays the recordings over a 1 year time span:

- Select the block relative to the month in which the desired video is found from the grid. A block has been selected when its border is framed in blue.
- Press the "zoom +" button to view the recordings found within the selected month and select the block relative to the desired day from the grid.
- Press the "zoom +" button to view the recordings found within the selected day and select the block relative to the desired time from the grid.
- Press the "zoom +" button to view the recordings found within selected hour and select the block relative to the desired minute from the grid.
- Press the button to start the playback. The playback will continue until the end of the selected time.
- After having viewed the playback, press the button.
- Use the "Zoom -" button to go back and make a new selection.

The procedure described above zooms in through the entire time tree. It is possible to stop earlier and start playback by selecting a block which is not necessarily of 30 seconds in length. For example, it is possible to stop at the hour time level and select an hour block. In this manner the playback will start from the beginning of the selected hour.

If a larger image size is required, a larger version of the audio / video player can be displayed by clicking on the black square of the video while the playback is stopped.

Video playback

This screen contains the same controls of the player on the previous screen, with the added possibility of selecting video cameras 1 through 8 and 9 through 16. This screen can be closed by clicking on the square of the video display.

NOTICE

NOTE: *Playback can be performed at the hours and minutes zoom levels. It is not possible to exit or to perform other operations in the screens described above while playback is in progress.*

Exporting

Use the following procedure to perform an export operation:

- **Only in local mode**: Connect the USB storage device, flash drive or FAT32 formatted portable hard disk to the USB port on the front of the device.
- Check that the recordings to be exported are available using the display functions described above.
- Select the video camera from which you want to export the recordings by clicking on the name of the desired camera with the mouse.
- Fill out the four "**From**" and "**To**" text fields in order to specify the video time interval to be exported.
- Select the format with which to export the video (H264 or Sicep format)
- Press "**Export**" to initiate the export operation for the selected video. In local mode the export operation takes place on the previously inserted USB flash drive, while in remote mode the operation takes place through the VDSClient software. A dialog box opens which allows the user to select a location on the PC in which to save the exported file. During the export operation a window showing the operation's completion percentage is displayed. The operation can be considered complete once the window disappears.

7.6- EVENTS ARCHIVE

On this screen the user can view the list of events which have been recorded by the device. This list can be filtered based on event typology and/or on a time basis. A maximum of 8 events can be displayed simultaneously, but the user can scroll through the entire list using the "arrow" and "double arrow" buttons to the right of the grid.
Each time the screen is accessed, only the events from the day in progress will be displayed.

Events archive

The buttons found on this screen are described in detail below, starting from the top.

Event:
Allows the user to filter the events to be displayed, choosing from: "all", "input variation" and "malfunction".

Input:
Allows the user to filter the input variation events.

Start date - End date (dd-mm-yyyy):
Allows the user to filter the list by selecting the start and end dates of the interval containing the events to be displayed.

Start time - End time (hh:mm):
Allows the user to filter the list by selecting the start and end times of the interval containing the events to be displayed.

Format:
Use this field to select the exported file format: H.264 or standard Sicep format.

Export:
Initiates the export operation for the video associated with the selected event. The selected event is displayed with a blue border in the events grid below.

Erase USB pen:
Eliminates all of the contents of the USB device connected to the VDS in order to free up the space required for the new recordings to be exported.

Update:
Allows the user to update the list of events by applying the filters described above.

The columns of the grid contain the following information in relation to each event:

Date:
Identifies the date on which the event occurred

Time:
Identifies the time at which the event occurred

Alarm:

If the event in question is an alarm event, this column will display the following symbol. This symbol will be displayed for all input variation events.

Event:
The types of events include:

- **Change of status**. An event that may have to do with the status of the mains power supply or the backup battery's charge status.
- **Input variation**. The device has four digital inputs. The user can modify the **CONFIGURATION EVENTS DIGITAL INPUTS** section in order to decide whether the variation of these inputs should be considered an event. These variations can be associated with pre-alarm and alarm videos.
- **Motion Detector** .Indicates that a motion detector event has been detected by one of the video cameras upon which it this feature has been activated.
- **Hardware out of service**. Indicates that there are problems with a hardware component, a video capture card or the VDS/P card. Check the status of these devices in the diagnostics section and request assistance if necessary.
- **Device Overheat**. Device overheating. Indicates that the temperature of the mother board has exceeded the alarm threshold set in the **CONFIGURATION DIAGNOSTICS** screen. Check whether the fan in functioning properly.
- **Hard disk malfunction**. Indicates that a hard disk has either malfunctioned or is not accessible.
- **Video loss**. Indicates that the video signal from a camera is lost for a long time than as been set in configuration.

Channel

- If the type of event is an **input variation**, this value identifies the relative input from 1 to 4
- If the type of event is a **Video Absent Signal** or a **Motion Detector**, this value identifies the video channel upon which the event has occurred.
- If the type of event is a **status change**, this column may contain: **Power supply**, **battery** or **status tampering**

Status

- If the type of event is an **input variation**, it may be: **open** or **closed**.
- If the type of event is a **status change** of the battery channel, then it may be: **charged** or **drained**.

Record.
When there is video associated with an alarm event, this is indicated by a colored symbol . If an event does have video associated with it, this can be played by selecting it and pressing the play button on the top left.

NOTICE

NOTE: *The video playback functionalities are they same as those which are present in the* ***"recordings archive"*** *screen.*

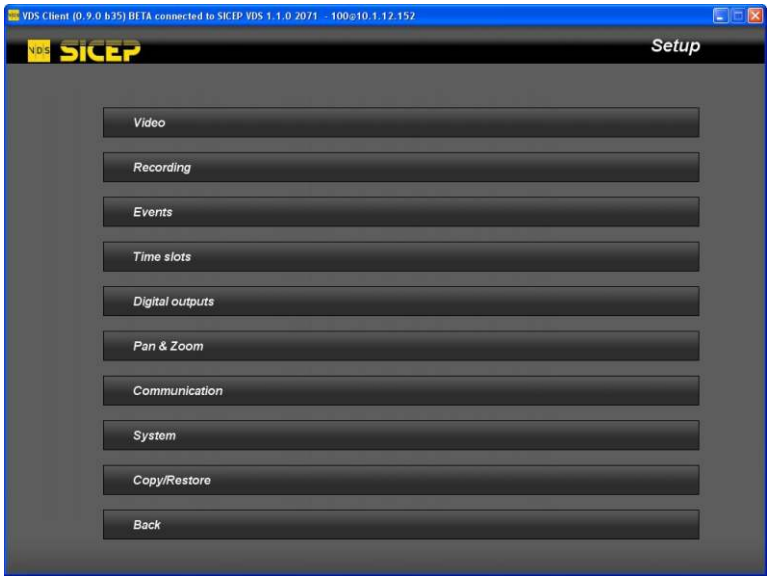
Exporting video associated with an event

Use the following procedure to export videos which are associated with events:

- **Only in local mode**: Connect the USB storage device, flash drive or FAT32 formatted portable hard disk to the USB port on the front of the device.
- Display the events to be exported as described in the previous chapter
- Select the row for the event in question with video associated, making sure that the blue frame appears around it
- Select the format with which to export the video (H264 or standard Sicep format).
- Press "**Export**" to initiate the export operation for the selected video. In local mode, the export operation takes place on the inserted USB device. In remote mode, the export operation takes place through the VDSClient software. A dialog box opens which allows the user to select a location on the PC in which to save the exported file. The exported video will either be made up of both the pre-alarm and alarm videos, if both are present, or else will only include that which is present of the two. During the export operation a window showing the operation's completion percentage is displayed. The operation can be considered complete once the window disappears.

7.7- SETUP

The configuration screen contains the buttons for accessing the various sub-screens, which allow the user to set the system's functioning parameters. This screen can only be accessed by one user at a time and only by "Installer" level users. If, for example, a local user has accessed the configuration screen and a second user attempts to access it from a remote workstation through VDSClient, or vice versa, the latter will receive the following message: "Impossible to access device configuration".



Setup

The items available from the configuration screen are listed below and will be described in detail in the following chapters:

- Video
- Recording
- Events
- Schedule
- Digital Outputs
- Panning & Zooming
- Communication

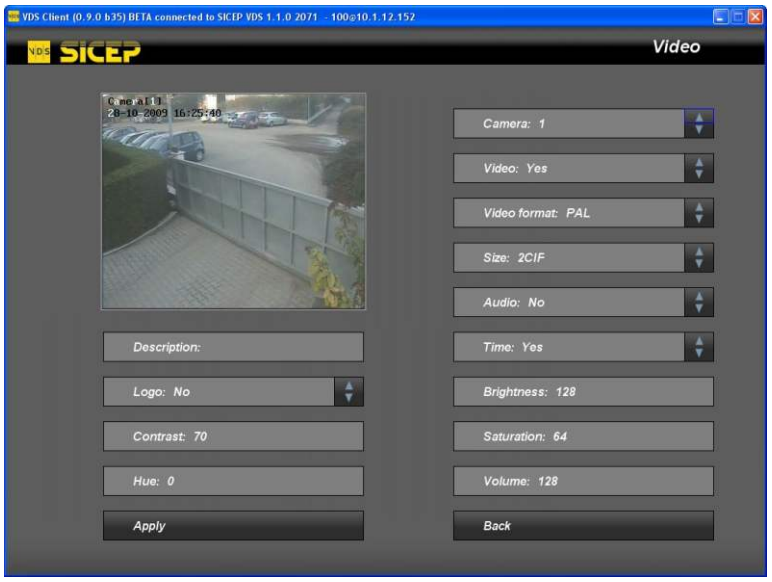
- System
- Copy/Restore
- Back

NOTICE

NOTE: *In order to save the modifications which have been made to the configuration parameters, the user must go back until the screen appears which asks whether or not to save the new settings.*

Video

This screen allows the user to set the parameters for each of the video inputs connected to the device.



Video

Camera	Range *1- 4/8/12/16*	

Selects the video input for which to set the parameters

Video	Range *Yes, No*	Default *Yes*

Enables/disables video capture from the video input selected above

Video format	Range *PAL, NTSC*	Default *PAL*

Selects the video input format: PAL or NTSC

Size	Range *4CIF, 2CIF, DCIF, CIF*	Default *DCIF*

Selects the size of the video to be captured.
In the case of **PAL** format video:

- 4CIF 704x576 pixels (possible for two channels simultaneously, see the following Note)
- 2CIF 704x288 pixels
- DCIF 528x384 pixels
- CIF 352x288 pixels

In the case of **NTSC** format video:

- 4CIF 704x480 pixels (possible for two channels simultaneously, see the following Note)
- 2CIF 704x240 pixels
- DCIF 528x320 pixels
- CIF 352x240 pixels.

Audio	Range *Yes, No*	Default *No*

If enabled, captures audio as well from the selected input.

Time	Range *Yes, No*	Default *No*

If enabled, the following information will be superimposed upon the video:

- The description of the video camera
- The current date and time.

Description		Default *Empty*

Allows for the user to insert a description for the video camera that is more meaningful than the simple default numeric description (Camera 1..4/8/12/16).

Logo		Default *No*

Allows for the user to decide if and where to position the Sicep logo upon the image recorded by the device. The possible selections include:

- No logo present
- Upper right
- Lower right
- Lower left.

Brightness	Range *0-255*	Default *128*

Adjusts the brightness of the image

Contrast	Range *0-127*	Default *64*

Adjusts the contrast of the image

Saturation	Range *0-127*	Default *64*

Adjusts the saturation of the image

Hue	Range *0-255*	Default *0*

Adjusts the color tone of the image

Volume	Range *0-255*	Default *128*

Adjusts the volume of the recorded audio.

Apply		

Applies the modifications made to the parameters.

NOTICE

NOTE: *The capture cards have onboard DSPs, each of which is dedicated to the compression of 4 video channels. Each single DSP is capable of handling 4 video channels with the following resolutions:*

- *2 channels at 4CIF resolution and 2 at CIF resolution*
- *4 channels at 2CIF resolution*
- *4 channels at DCIF resolution*
- *4 channels at CIF resolution*

The 4-channel capture cards have only one DSP while the 8-channel cards have 2 DSPs. The various models will therefore have a maximum of 2 channels available in 4CIF resolution for each group of 4 consecutive video channels.
The following table shows the possible resolutions for each group of 4 channels.

Channels	4CIF + CIF	2CIF	DCIF	CIF
1..4	2 + 2	4	4	4
5..8				
9..12				
13..16				

Recording

This screen allows the user to modify the video recording parameters.

Recording

The parameters which can be used to configure H264 video compression include:

Camera	Range *1-4/8/12/16*	

Selects the video camera for which to set the recording parameters

Rec. mode	Range	Default
	24 h, Time slots, Event	*Event*

Selects the video camera's recording mode: 24 hour, only at specific times or in the case of events associated with the video camera.

Time slot group	Range	Default
	0-4	*1*

Selects the time frame group to which the selected video camera belongs

Only on activated peripheral	Range	Default
	Yes, No	*Yes*

Determines whether to record only while the system is active or always.

Bit rate type	Range	Default
	Constant,Variable	*Constant*

Sets either a constant or variable bit rate. In the first case the bit rate is constant under all conditions, regardless of quality, in the second case the quality is maintained constant by varying the bit rate. In both cases the bit rate will not exceed the maximum value set using the **Bit rate** parameter.

Bit rate (kbit/sec)	Range	Default
	100-2000	*500*

Corresponds to the actual video recording bit rate in the case of constant Bit rate control and the maximum bit rate in the case of variable Bit rate control. Lowering this value increases compression, but decreases video quality.

Frame rate (fps)	Range	Default
	1-25 per PAL, 1-30 per NTSC	*25*

The number of frames per second for the video being recorded.

NOTICE

NOTE: *In the case of a PAL format video camera, the frame rate must not exceed the value of 25fps*

Key frame	Range	Default
	10-200	*100*

Indicates the number of P and B frames which will be placed between the two I frames. The I frames are used to compress the adjacent frames. Increasing this parameter means increasing video compression, but also decreasing video quality. Decreasing this value can result in quality loss because many whole frames, the less compressed I frames, will be inserted, which occupy a large part of the available bit rate. It is recommended to leave this parameter at its default value.

B frame	Range	Default
	0-2	*2*

The number of B-type frames, or rather, frames which are bi-directionally predicted. Increasing this parameter means increasing video compression, but also decreasing video quality. It is recommended to leave this parameter at its default value.

P frame	Range	Default
	0-2	*2*

The number of P-type frames, or rather, frames which are mono-directionally predicted. It is recommended to leave this parameter at its default value.

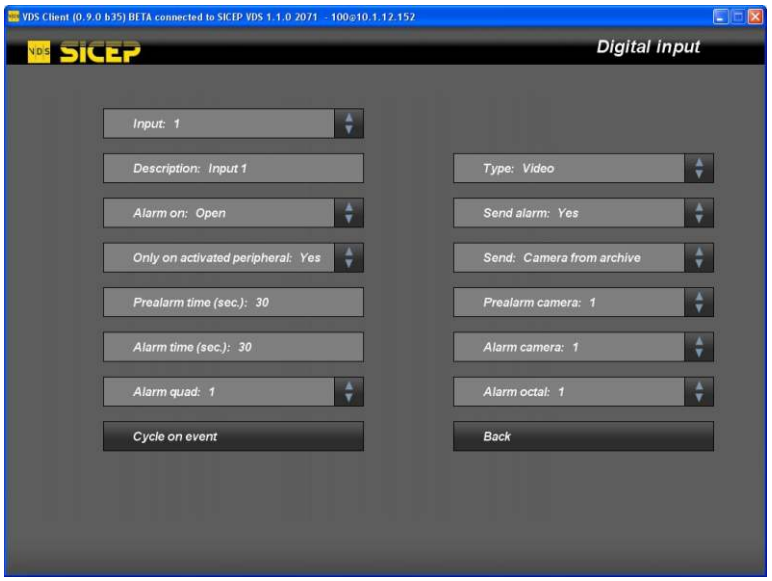
Events

This screen allows the user to set the parameters relative to the events which the device is capable of detecting, recording and eventually transmitting.

Events

Digital Input

This screen allows the user to set the parameters relative to the generation of alarms due to logical input variations. It is possible to associate these events with a video, in relation to any of the available video inputs.



Digital Input

Input	Range *1-4*	Default

Selects the logical input to configure.

Description		Default *Input 1-4*

Associates a description with the selected input

Type	Range	Default
	Disabled, Video, Logical	*Video*

Video, in order to associate a video recording with the input.
Logical, means that only an input variation signal will be recorded and/or sent. If any video has been associated with the input, it may be necessary to modify the parameters which follow. If **Disabled**, this input will not detect any variations.

Alarm on	Range	Default
	Open, Closed, Open/Closed	*Open*

Allows the user to decide when the alarm must be activated: **Open** generates an alarm for input opening, **Closed** generates and alarm for input closing, **Open/Closed** generates an alarm in both cases.

Send alarm	Range	Default
	Yes, No	*Yes*

If activated, an alarm will be sent to the MvsNET or DATA9000MVS center in the event of variations for the input in question that matches what as been set in the previous parameter. Refer to the **CONFIGURATION COMMUNICATION RECIPIENTS** section for a description on how to configure recipients.

Only on activated peripheral	Range	Default
	Yes, No	*Yes*

If set to Yes, the event will only be detected while the system is activated, otherwise it will also be detected while the system is deactivated.

Send	Range	Default
	Camera from archive, Camera in streaming, Quad in streaming, Octal in streaming, Hexal in streaming	*Camera from archive*

Determines the type of video to send to the recipient in the event of an alarm. If "Video from archive" is selected, the pre-alarm and alarm videos, recorded with the parameters set in **CONFIGURATION RECORDING**, will be sent. In the other cases, only the alarm videos from one or more of the video cameras will be sent. The quality of this video is determined based on the parameters set in the **CONFIGURATION COMMUNICATION STREAM H264** section.

Prealarm time (sec)	Range	Default
	0-60	*30*

Sets the duration (in seconds) of the recording prior to the input variation

Prealarm camera	Range	Default
	1-4/8/12/16	*Number of the current input*

Selects the video camera with which the pre-alarm video shall be recorded.

Alarm time (sec)	Range	Default
	0-240	*30*

Sets the duration of the recording after to the input variation

Alarm camera	Range	Default
	1-4/8/12/16	*Number of the current input*

Selects the video camera with which the alarm video shall be recorded

Alarm quad	Range	Default
	1-4	*1*

Selects the quad to be sent if the "Send" combo box has been set to "Streaming Quad Video". The user must choose from amongst the available configured quads in the **CONFIGURATION SYSTEM INTERFACE QUAD** section.

Alarm octal	Range *1-2*	Default *1*

Selects the octal to be sent if the "Send" combo-box has been set to "Streaming Octal Video". The user must choose from amongst the available configured octals in the **CONFIGURATION SYSTEM INTERFACE OCTAL** section.

Cycle on event		

Allows for the user to access the screen used to set the cyclical sequence to be displayed locally whenever an event takes place on a digital input.

Cycle on event
This screen allows the user to set the cyclical sequence to be displayed locally whenever an event takes place.

Cycle on event

Input	Range *1-4*	Default *1*

Selects the input at which to activate the display of the cyclical image sequence.

Cycle on event	Range *Yes, No*	Default *No*

Enables the display of a cyclical sequence of images whenever a status variation occurs at the selected input.

Total time (sec)	Range *10-180*	Default *60*

Total duration of the cyclical sequence display in seconds.

Numbers of cycle items	Range *1-23*	Default *23*

Number of video elements which make up the cyclical sequence.

Cycle item	Range *1-23*	Default *1*

Selects the element of the cyclical sequence to be configured.

	Range	Default
	Camera 1- 16, Quad 1 - Quad 4, Octal 1, Octal 2, Hexal	*Camera 1*

Associates the selected cyclical element with a video camera, a quad, an octal or the hexal.

Time (sec.)	Range	Default
	2-120	*5*

Duration of the cyclical element's display in seconds.

Motion detector

As previously stated, the device is equipped with the possibility of detecting movement within the scenes being captured by the video cameras.

Motion detector

The parameters to be configured in order to activate this functionality are described below.

Camera	Range	
	1-4/8/12/16	

Selects the video camera upon which to configure the motion detection functionality.

Enabled	Range	Default
	Yes, No	*No*

Enables motion detection on the video camera selected above

Only on activated peripheral	Range	Default
	Yes, No	*Yes*

If set to Yes, the motion detection functionality will only be enabled while the system is activated, otherwise it will be enabled for 24 hour operation.

Mode	Range	Default
	Fullscreen, Areas	*Fullscreen*

Fullscreen means that the entire frame will be used for motion detection, while **Areas** means that one or more areas will be defined as the frame's sensitive areas and will be used or motion detection independently.

Areas		

By pressing this button, the user can access the screen used for defining the motion detector's sensitive areas.

Treshold	Range 0-100	Default 50

The percentage of the area which must change before establishing that movement has occurred.

Grade	Range 0-6	Default 3

Motion detector sensitivity. Setting this parameter to a higher value will facilitate the detection of movement.

Fast motion frames	Range 0-12	Default 2

The frame interval for detecting fast movement. If this parameter is set to 0 then it will not be possible to detect movement, otherwise any movements which take place within the number of frames set with this parameter will be detected.

Slow motion frames	Range 13-1000	Default 15

The frame interval for detecting slow movement. Any movements which last for at least the number of frames set with this parameter will be detected.

Prealarm time (sec.)	Range 0-60	Default 30

Sets the pre-alarm recording duration in the case of a motion detector event

Alarm time (sec.)	Range 0-240	Default 30

Sets the alarm recording duration in the case of a motion detector event

Time Out (sec.)	Range 0-240	Default 5

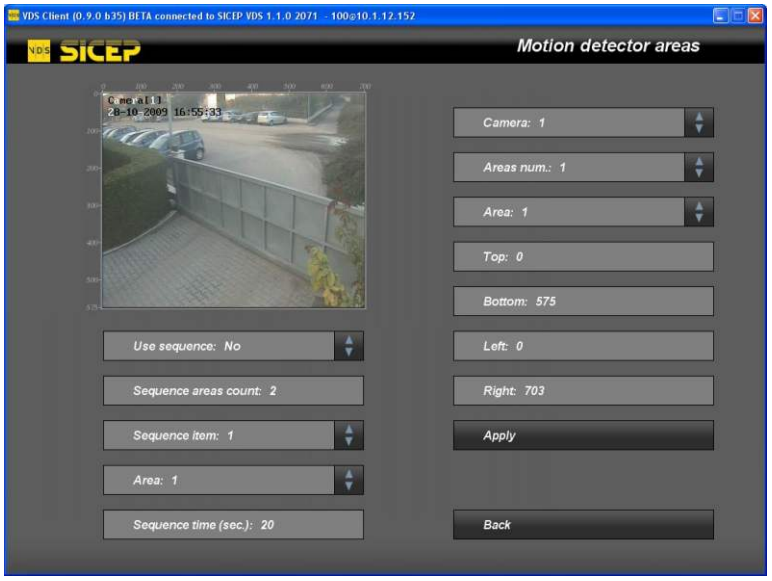
The time which the system waits to reactivate the motion detector after a motion detector event has occurred.

Apply		

Applies the current motion detector settings, thereby allowing the user to verify the effects in the image shown on the upper left.

Areas

This screen allows the user to define each video camera's sensitive areas for motion detection as well as to define a sequence of areas which will generate a Motion Detector alarm event if set off consecutively. In order to facilitate the definition of these areas, two rulers are displayed within the video frame. These axes measure the pixel coordinates with respect to the image's "origin", or rather, its upper left corner.



Areas Motion Detector

Camera	Range *1-4/8/12/16*	

Selects the video camera upon which to configure one or more sensitive areas.

Areas num.	Range *1-8*	Default *1*

Sets the number of areas to be configured for the selected video camera.

Area	Range *1-N° aree*	Default

Selects the area to be defined. The maximum value depends on the **No. of Areas** parameter

Top	Range *0-575*	Default *0*

The upper limit of the rectangle which defines the sensitive area on the image

Bottom	Range *0-575*	Default *575*

The lower limit of the rectangle which defines the sensitive area on the image

Left	Range *0-703*	Default *0*

The left-most limit of the rectangle which defines the sensitive area on the image

Right	Range *0-703*	Default *703*

The right-most limit of the rectangle which defines the sensitive area on the image

Apply		

Applies the settings for the sensitive area. The results will be visible in the image on the upper left

Use sequence	Range *Yes, No*	Default *No*

Enables a sequence of sensitive areas which, in order to activate the motion detector alarm, must all be set off in a certain order.

Sequence areas count	Range *2-8*	Default *2*

Sets the number of areas to be used in the sequence

Sequence item	Range *1-No. Sequence areas*	

Selects the element of the sequence

Area	Range *1-No. Areas*	

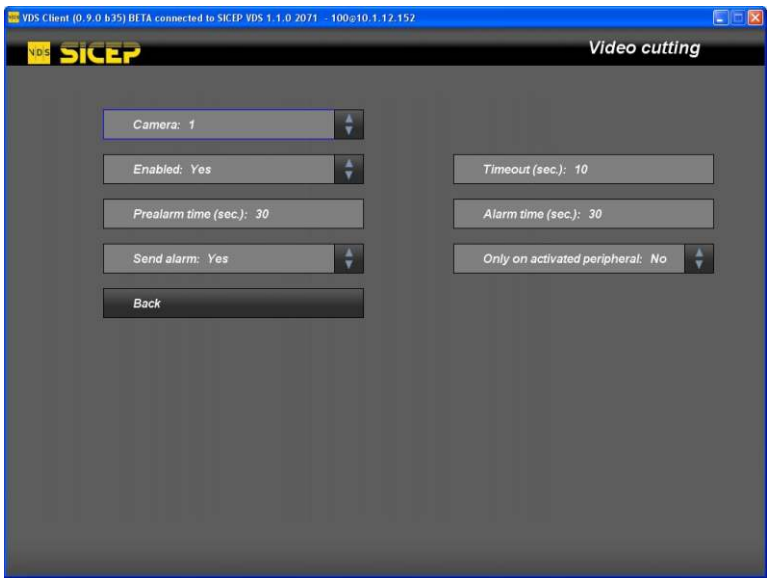
Selects the area to be associated with the sequence element selected above

Sequence time (sec.)	Range *1-60*	Default *20*

Maximum time in which the motion detector alarms for all of the areas which make up the sequence must be set off. Only in this case will the sequence motion detector alarm be activated.

Video cutting

This screen allows the user to configure the video loss parameters, or rather, the detection of video signal input absence, for each video camera. If the video input signal absence lasts for a time greater than the value which has been set by the user, an alarm will be generated.



Video cutting

Camera	Range *1-4/8/12/16*	

Selects the video camera for which to set the video loss parameters

Enabled	Range *Yes, No*	Default *No*

Enables video loss detection on the selected video camera.

Timeout (sec.)	Range *1-60*	Default *10*

The maximum duration of video absence, in seconds, after which a video loss event will be generated.

Prealarm time (sec.)	Range *1-60*	Default *30*

Sets the pre-alarm recording duration in the case of a video loss event.

Alarm time (sec.)	Range *1-60*	Default *30*

Sets the alarm recording duration in the case of a video loss event

Send alarm	Range *Yes, No*	Default *Yes*

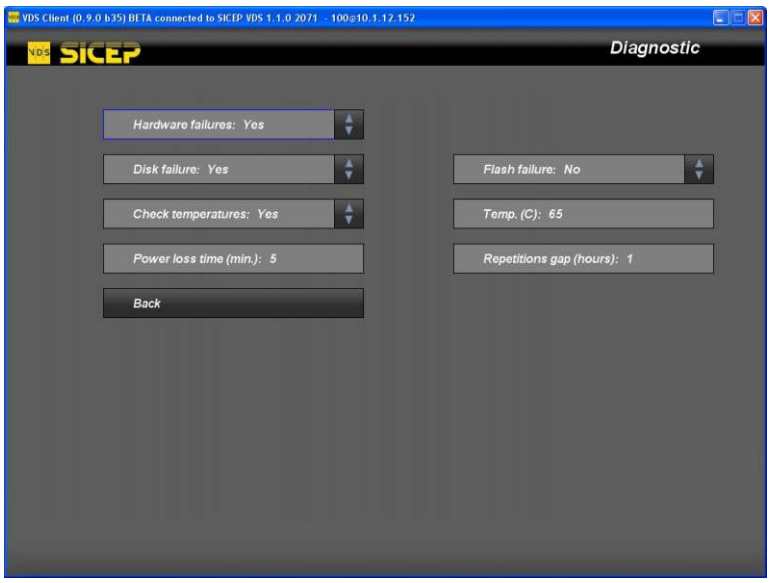
Decides whether an alarm notification should be sent to a remote recipient through MvsNET or DATA9000MVS. Refer to the **CONFIGURATION COMMUNICATION RECIPIENTS** section for a description on how to configure recipients.

Only on activated peripheral	Range *Yes, No*	Default *Yes*

If set to Yes, the video loss event will only be detected while the system is activated, otherwise it will also be detected while the system is deactivated.

Diagnostic

The device is capable of continuously monitoring the functionality of its components and is capable of recording and signaling any malfunctions to the operations center. This screen allows the user to configure these monitoring activities.



Diagnostic

Hardware failures	Range *Yes, No*	Default *Yes*

Enables the detection of a series of hardware problems, such as:

- Video capture card malfunctions
- VDS/P card malfunctions or poor connections

Disk failure	Range *Yes, No*	Default *Yes*

Enables an alarm notification in the event that access one of the hard disks has failed.

Flash failure	Range *Yes, No*	Default *No*

Enables an alarm notification in the event that the flash drive support returns an access error.

Check temperatures	Range *Yes, No*	Default *Yes*

Enables the monitoring of the device's temperatures and sends alarm notifications in the event that the thresholds below should be exceeded.

Temp. (C)	Range *50-80*	Default *65*

Microprocessor internal temperature alarm threshold.

Power loss time (min.)	Range *1-120*	Default *60*

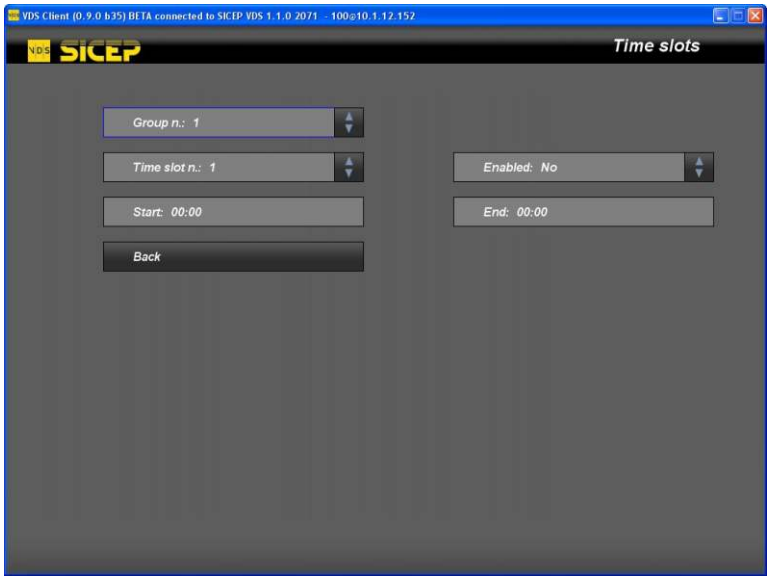
Sets the time which must pass, in minutes, before generating an alarm in the even of a 230/110Vac mains electrical power loss.

Repetitions gap (hours)	Range *1-24*	Default *1*

The time interval, in hours, which determines how often the recipient shall be sent repeated notifications of a diagnostics alarm.

Time slots

This screen allows the user to define the device's recording schedule. This schedule can be enabled in order to regulate video recording and/or to activate the motion detection system.



Time slots

Group n.	Range *1-4*	

Selects the time frame group to be defined

Time slot n.	Range *1-4*	

Selects the time frame of the current group to be configured.

Enabled	Range *Yes, No*	Default *No*

Enables the selected time frame

Start (hh:mm)		Default *00:00*

Sets the start time for the current time frame

End (hh:mm)		Default *00:00*

Sets the end time for the current time frame

Digital outputs

The four digital outputs which correspond to the OUTPUT 1-4 terminals can be activated through the local interface and through remote interfaces such as VDSClient, VDSMobile, MvsNET and DATA9000MVS. While set to "ON", the output is closed to GND. When set to "OFF", the output is open.

Digital outputs

Output	Range *1-4*	

Selects the output to be configured

Description		Default *Output 1..4*

Field used to assign a name, other than the default name, to the output

Type	Range *Monostable, Static*	Default *Static*

Determines the output's functioning mode. This can be either Monostable (the activation status is only maintained for a time equal to the "Impulse duration"), or Static (the activation status is maintained until changed by the operator).

Status	Range *ON, OFF*	Default *OFF*

Displays the current output's status and allows for it to be controlled. While OFF, the output is in high impedance. While ON, the output is closed to GND.

Pulse duration (sec.)	Range *1-10*	Default *1*

Determines the duration of the ON status (in seconds) if the output has been configured as a monostable type.

Alarm time (sec.)	Range *1-60*	Default *5*

Determines the duration of the output's ON status (in seconds) in the case of activation due to an alarm. The alarm output always behaves in a monostable manner.

Panning & Zooming

The VDS device is capable of controlling Speed-Dome video cameras; this section allows for their management parameters to be configured.

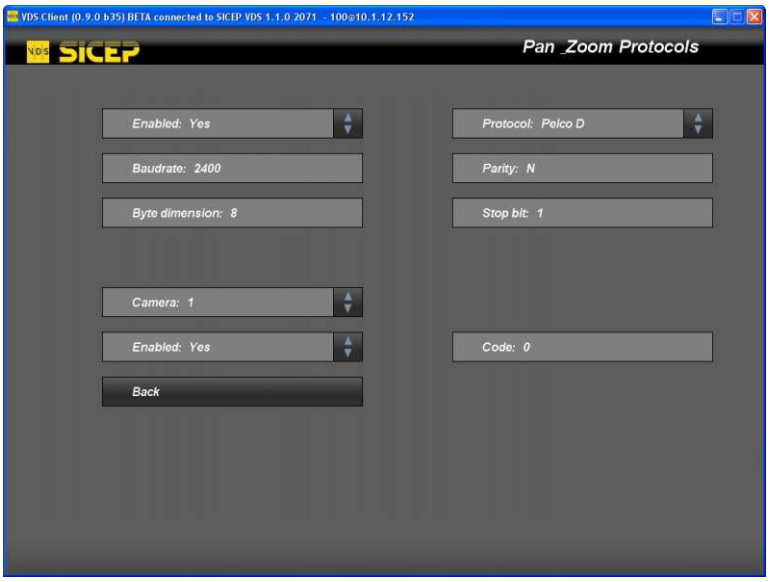
Pan Zoom Protocols

This section allows the user to configure the parameters used by the Speed-Dome video cameras. All of the Speed-Dome video cameras on the device's RS485 output line must be configured to function according to the selected protocol and its parameters.

WARNING

WARNING:

Before connecting the video cameras to the RS485 serial bus, make sure that they have been appropriately configured with the protocol that has been set on the VDS device and that each has a unique identification code.



Pan Zoom Protocols

Enabled	Range *Yes, No*	Default *No*

Enables the use of the pan and zoom commands.

Protocol	Range *Pelco D, Pelco P, Philips*	Default *Pelco D*

Selects the protocol to be used. It is essential that this parameter be set to the protocol which is set on all of the video cameras connected to the device through the RS485 output.

Baudrate (bps)	Range *300-115200*	Default *4800*

Sets the baud rate for communications over the RS485 serial line. The possible values are: 300, 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200.

Parity	Range *N, S*	Default *Off*

Determines the parity control over the transmitted data. N is equivalent to no parity, while S is equivalent to parity.

Byte dimension	Range	Default
	5, 8	8

Determines the size of the bytes transmitted.

Stop bit	Range	Default
	1, 2	1

Determines the number of stop bits for the serial communication

Camera	Range	
	1-4/8/12/16	

Selects the camera to setup.

Enabled	Range	Default
	Yes, No	No

Enables the panning functions on the selected video camera.

Code	Range	Default
	0-1024	0

The identification code for the current video camera. This code must be the same as that which was manually configured on the video camera before being installed on the RS485 serial bus.

Communication

This screen allows the user to set the device's parameters for communication with the remote Clients.

Communication

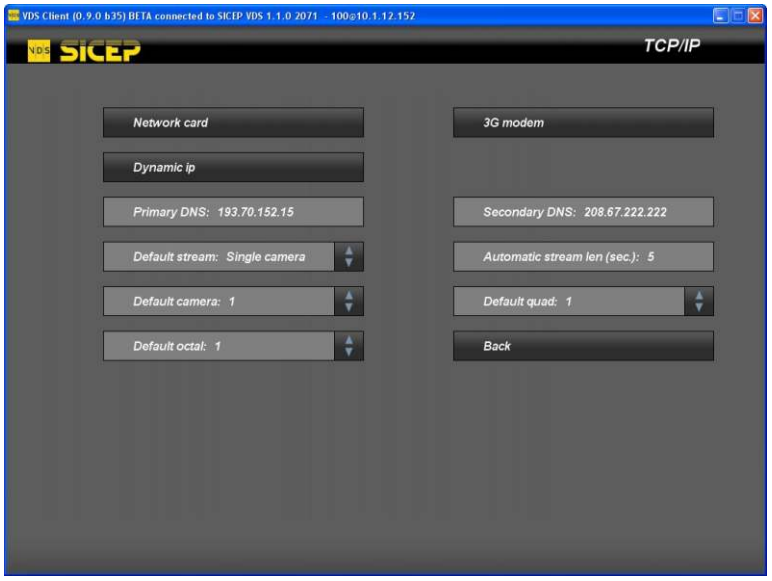
WARNING

WARNING:

Communication parameters which are set using VDSClient will be enabled after disconnection. Subsequent connections will be performed using the new parameters.

TCP/IP

This screen allows the user to configure the parameters required for communication with a TCP/IP protocol.



TCP/IP

Primary DNS		Default 193.70.152.15

Primary DNS server for resolving the IP addresses.

Secondary DNS		Default 208.67.222.222

Secondary DNS server for resolving the IP addresses.

Default Stream	Range *Single camera, Quad, Octal, Hexal*	Default *Single camera*

Selects the type of video that the device sends to the center, if the center sends a request for the default video.

Automatic stream len (sec.)	Range *1-15*	Default *5*

Duration of the video sent following an automatic query.

Default camera	Range *1-4/8/12/16*	Default *1*

Sets the default video camera, if the default video supplied by the device is that of a single video camera.

Default quad	Range *1-4*	Default *1*

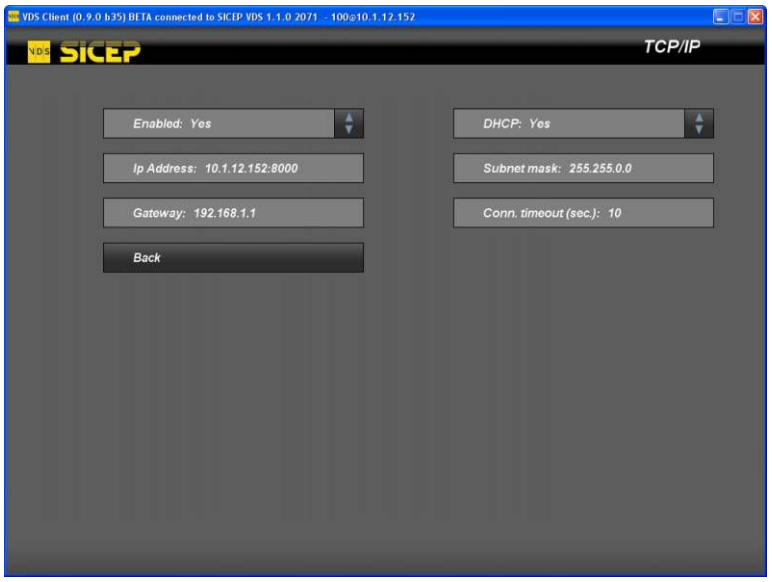
Sets the default quad, if the device's default output video stream is that of a quad.

Default octal	Range *1, 2*	Default *1*

Sets the default octal, if the device's default output video stream is in octal format.

Network card

This screen allows the user to configure the VDS' network card settings.



Network card

Enabled	Range *Yes, No*	Default *Yes*

Enables communication with a TCP/IP protocol.

DHCP	Range *Yes, No*	Default *No*

Enables the network connection through a DHCP server. If enabled, the DHCP server will assign an IP address to the device.

Ip Address		Default *10.1.1.98*

Sets the video device's IP address. The default port at which the device responds to queries is 8000. It also shows the assigned ip address, if a DHCP server is in use.

Subnet mask		Default *255.255.255.0*

Sets the subnet mask parameter for the network to which the device is connected.

Gateway		Default *10.1.1.1*

Sets the address of the gateway.

Conn. Timeout (sec.)	Range *5-20*	Default *10*

Sets the maximum waiting time for the connection via TCP/IP, after which the connection attempt will be considered to have failed. Not implemented.

3G Modem

A 3G modem can be connected to the device, thereby allowing it to connect to the internet, even in locations where no ADSL connection is available. The screen used for its configuration is described below.

3G Modem

Enabled	Range *Yes, No*	Default *No*

Enables the device to communicate through a 3G modem.

Connection	Range *24 hours / Wake on ring*	Default *Wake on ring*

Establishes the 3G network connection mode. If set to 24 hours, a continuous network connection will be maintained. If set to Wake-Up, the connection will only take place upon the reception of a data call at the SIM card's telephone number.

NOTICE

NOTE: *In the case of a "Wake-Up" connection, the first recipient configured on the VDS device must be the MVSNet center, which operates in that mode. A fundamental requirement for the function of this type of mechanism is that the SIM card being used must be capable of answering both data and voice calls.*

Model		Default *<sconosciuto>*

Selects the model of the 3G modem.

Modem Port		Default */dev/ttyUSB0*

Sets the USB port to be used for the modem connection. For Onda type modems, use */dev/tty/USB1*. For the Option Icon 225 type modem, use the */dev/tty/HS3* port.

Info Port		Default */dev/ttyUSB1*

Sets the USB port to be used to recover connection information. For Onda type modems, use */dev/tty/USB2. For the Option Icon 225 type modem, use the /dev/tty/HS0 port.*

Baud rate	Range *300-460800*	Default *460800*

The speed of the communications between the serial port and the modem. See the manual of the modem being utilized. The default value is valid for all of the mobile service providers currently present on the Italian market.

Number		

The telephone number used for 3G communication. Use either ***99#** or else ***99***1#** . For more information, consult the service provider for the 3G modem being utilized.

APN		

The name of the access point for the 3G connection. This parameter depends on the service provider. Consult the documentation attached to the SIM card purchased.
The values are generally the following:

Tim	ibox.tim.it
Vodafone	web.omnitel.it
Wind	internet.wind
Tre	tre.it

Contact your service provider for more information.

Call recogn.		Default *RING*

Sets the string with which to compare the 3G modem's messages in order to determine the presence of a call at the SIM's telephone number. This parameter only has effect in "Wake-Up" connection mode.

NOTICE

NOTE: *In the case of the Huawei E272 model modem, set this parameter to **"OK"***

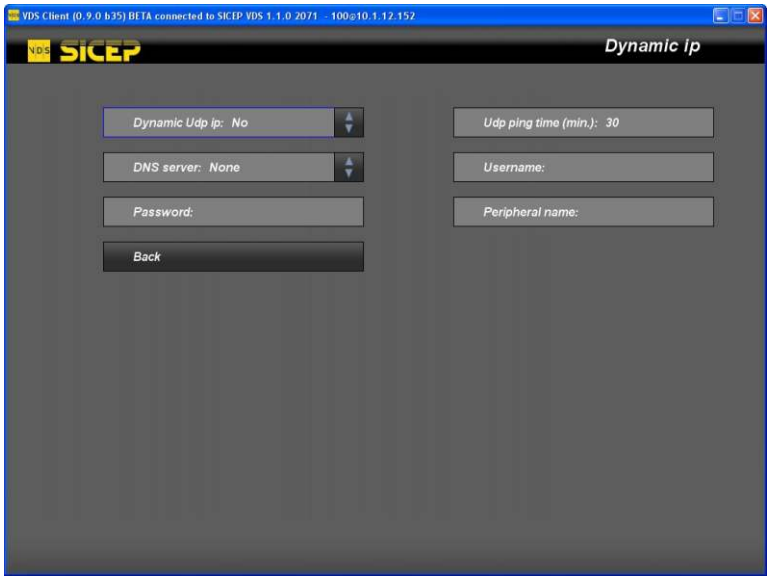
WARNING

WARNING!
The following procedure must be performed in order to install a 3G modem:
- Connect the modem to the USB port at the rear of the VDS device
- use the "Model" combo box to select the corresponding model
- use the "Enabled" combo box to enable the modem
- save the configuration and use the "Restart" button on the "Restart/Shutdown" screen to restart the VDS device.

It is necessary to restart even after uninstalling a 3G modem

Dynamic Ip

This screen allows the user to configure the parameters required for dynamic IP address management.



Dynamic Ip

Dynamic UDP ip	Range *Yes, No*	Default *No*

Enables the management of the device's IP address through a UDP protocol. If active, the device maintains constant communication through a UDP protocol with all of the MVSClient recipients configured on the Recipients screen.

UDP ping time (min.)	Range *1-60*	Default *30*

If dynamic IP address is enabled, this is the interval with which the device sends messages to the center in order to keep the UDP connection open.

DNS server	Range *None, DynDNS*	Default *None*

Enables the management of the dynamic IP address through the DynDns commercial server.

Username		

The name with which registration has been performed on the server providing the dynamic DNS service.

Password		

The password with which registration has been performed on the same server.

Peripheral name		

The symbolic name of the VDS device previously configured on the server. This name must be inserted instead of the IP address whenever the device is to be queried.

WARNING

WARNING!

The IP address is updated on the DynDNS server every 5 minutes.. Wait this amount of time before querying the VDS device through any Client.

H264 Stream

If transmitting real time video to the client, it is possible to adjust the characteristics of the transmitted video stream based on the user's requirements and the bandwidth available for communication. For example, in order to guarantee quad-type video fluidity, make sure that the sum of the individual video cameras' bit rates is within the value of the bandwidth available for the transmission.

H264 Stream

Camera		

Selects the video camera for which to set the streaming parameters

Only on activated peripheral	Range *Yes, No*	Default *No*

Determines whether real time video will be sent from the associated video camera if the system id deactivated. If set to Yes, the device will not send real time video to the connected remote client while the system is deactivated. If set to No, it will send the video regardless. This parameter has no effect on local viewing or on sending streaming alarm videos to the MVSNet or DATA9000MVS center.

Size	Range *CIF, QCIF*	Default *CIF*

Selects the size of the video to be streamed.

Bit rate type	Range *Costant, Variabie*	Default *Costant*

Sets either a constant or variable bit rate. In the first case, the bit rate remains constant under all conditions, even in the case of images with strong variations, regardless of quality. In the second case, the quality is maintained constant by varying the bit rate. In both cases the bit rate will not exceed the maximum value set using the following parameter.

Bit rate (kbps)	Range *100-4000*	Default *200*

Corresponds to the bit rate of the video being transmitted, in the case of constant Bit rate control, and the maximum bit rate in the case of variable Bit rate control. Lowering this value increases compression, but decreases image quality.

Frame rate	Range *1-25 per PAL,* *1-30 per NTSC*	Default *10*

The number of frames per second for the video being transmitted.

Key frame	Range	Default
	100-200	100

Indicates the number of P and B frames which will be placed between the two I frames. The I frames are used to compress the adjacent frames. Increasing this parameter means increasing video compression, but also decreasing video quality. Decreasing this value can result in quality loss because many whole frames, the less compressed I frames, will be inserted, which occupy a large part of the available bit rate. It is recommended to leave this parameter at its default value.

B frame	Range	Default
	0-2	2

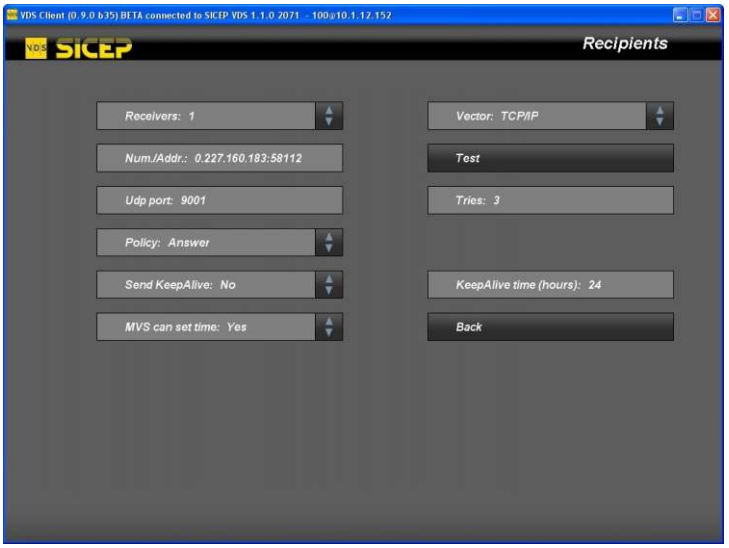
The number of B-type frames, or rather, frames which are bi-directionally predicted. Increasing this parameter means increasing video compression, but also decreasing video quality. It is recommended to leave this parameter at its default value.

P frame	Range	Default
	0-2	2

The number of P-type frames, or rather, frames which are mono-directionally predicted. It is recommended to leave this parameter at its default value.

Recipients

This screen allows the user to configure the alarm transmission recipients to whom the device will attempt to connect using the available communications devices.



Recipients

Recipients	Range	
	1-4	

Selects the recipient to be configured.

Vector	Range	Default
	None, TCP/IP	None

Sets the communications device to be used from amongst those available. Set this parameter to TCP/IP if the device uses an Ethernet or 3G device for external communications. If set to "None", this means that the recipient has not been configured.

Num./Addr.		

Sets the recipient's IP address.

Test		

Sends a test transmission with an associated video to the current recipient.

Udp port	Range	Default
	0-65535	*9001*

The UDP port of the MVSNet recipient to be used in the case of UDP dynamic IP management.

Tries	Range	Default
	0-9	*3*

Sets the number of connection attempts to be performed for the recipient.

Policy	Range	Default
	Answer, All	*Answer*

Answer means that once the first recipient has responded, alarm notifications will not be sent to any other recipients. **All** means that the alarm notification will be set to all of the recipients regardless.

Send KeepAlive	Range	Default
	Yes, No	*No*

Enables the periodic sending of the Keepalive message to all of the configured recipients.

KeepAlive time (hours)	Range	Default
	1-48	*24*

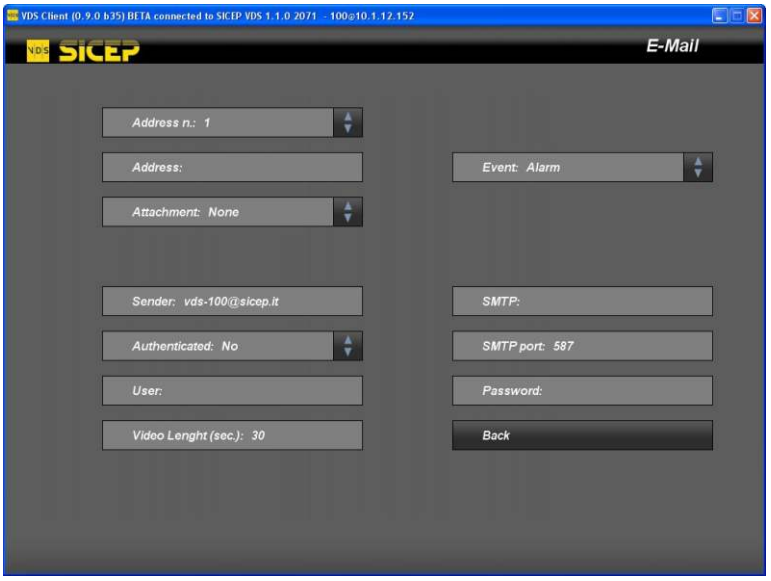
Determines the interval with which the device sends the Keepalive message to the recipients. The message is sent every time the device is turned on and every time the software is updated, regardless.

MVS can set time	Range	Default
	Yes, No	*Yes*

If enabled, this allows the MVSNet or DATA9000MVS central to check that the device's set time is synchronized with its own and to update the device's time if necessary. This check on behalf of the MVSNet or DATA9000MVS center can be performed at two different moments: during a device query or else when connecting for the purpose of sending the Keepalive message.

E-Mail

The device can be configured to send e-mails in the event of an alarm. This e-mail can contain both a JPEG image relative to the moment in which the alarm occurred, as well as an H264 format video.



E-mail

Address n.	Range *1-4*	

Selects one of the email addresses which can be configured.

Address	Range *Yes, No*	Default *Yes*

Specifies the e-mail address of the alarm notification's recipient.

Event	Range *Diagnostic, Alarm, Both*	Default *Alarm*

Selects for which type of alarm event an e-mail must be sent to the current recipient.

Attachment	Range *None, Images, Video*	Default *None*

Sets the eventual file type to be attached to the message. The type of alarm event, the date and the time are specified in the message regardless.

Sender		Default *vds-100@sicep.it*

Allows the user to specify the name which will appear in the "from" field of the e-mail message received from the VDS device.

SMTP		

IP address of the mail server used to send the e-mail messages.

Authenticated	Range *Yes, No*	Default *No*

Determines whether the mail server requires user authentication

SMTP port	Range *0-65535*	Default

Determines the port of the SMTP server to connect to.

User		

The username with which registration has been performed on the SMTP server.

Password		

The password for accessing the SMTP server.

Video Lenght (sec.)	Range *5-30*	Default *10*

Duration of the video to be sent (in seconds), measured from the moment in which the alarm occurs.

System

This section contains the buttons for accessing the various sub-screens, which allow the user to set the system's general parameters.

System

Peripheral

Each device is identified by a code and a password, which are necessary in order to access them both locally as well as from a remote workstation. These parameters can be configured in this section.

Peripheral

Peripheral code	Range *1-9999*	Default *100*

Sets the device's MVS identification code, which is necessary to access it from a remote workstation.

Description		

Allows the user to specify a string of text which will be displayed on all of the video channels

MVS password		Default *sicep*

Sets the MVS password for accessing the device. Up to 8 case-sensitive alphanumeric characters can be inserted.

Second MVS password		Default *sicep*

Allows the user to specify a second MVS password with the same characteristics as the "MVS Password"

Transmit Ins/Dis	Range *Yes, No*	Default *No*

Enables/disables the transmission of activation and deactivation operations to the MVSNet or DATA9000MVS center, which are determined by variations in the status of the INS/DIS input.

Shut down from remote	Range *Yes, No*	Default *Yes*

Enables/disables the shutdown of the VDS device from the remote control.

Enable VDS/P	Range *Yes, No*	Default *Yes*

Enables/disables the VDS/P card.

VDS/P port	Range *Yes, No*	Default */dev/ttyACM0*

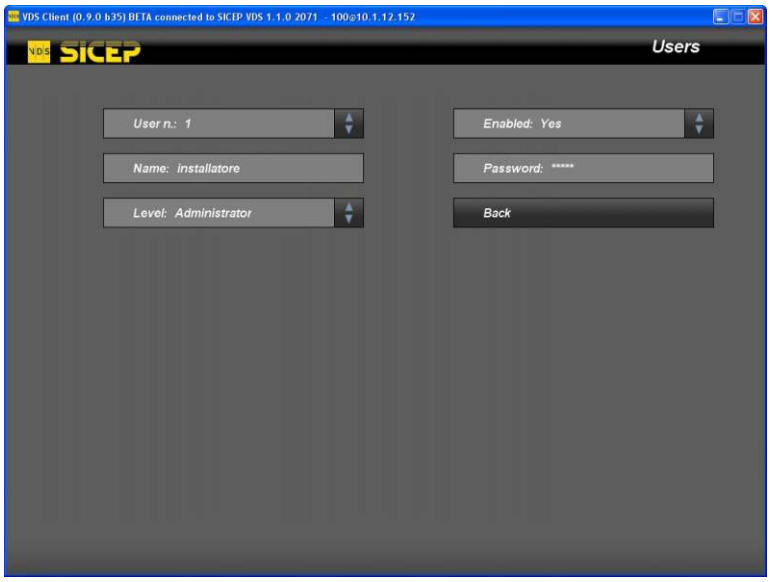
The USB port for communications between the main board and the VDS/P card. **It is recommended to leave this parameter set to its default value.**

Serial		Default *OK*

Must be OK. If a string of numbers and letters appears in this field, take note and contact Sicep customer assistance.

Users

This screen allows for the device's users to be defined, as well as their access permissions. Without a user account it is only possible to view images from the main screen of the interface.



Users

User n.	Range *1-32*	

Selects one of the users which can be configured.

Enabled	Range *Yes, No*	

Enables or disables access for the user selected in the previous field.

Name		

The user's username. Up to 31 case-sensitive alphanumeric characters can be inserted.

Password		

Password associated with the username. Up to 15 case-sensitive alphanumeric characters can be inserted.

Level	Range *Administrator, User, Watchman*	

Sets the device accessibility level permitted for the user. The **Administrator** level enables the user to carry out any operation upon the device. The **User** level enables the user exclusively for viewing the recordings archive and the events archive and does not allow for any configuration parameters to be modified. The **Watchman** level only allows for the user to view real time images and does not allow for a Login to be performed.

NOTICE

NOTE: *By default the device comes configured with only one installer-level user, with the following access parameters:*
Username: installatore
Password: sicep

WARNING

WARNING!
A maximum of 32 users can be configured on the device.

Interface

This screen allows the user to modify the parameters of the device's graphical interface.

Interface

Inactivity	Range *Ignore, Turn off, Cicle*	Default *Ignore*

Determines the live view mode from the video cameras to be displayed after the user has left graphical interface inactive for a certain period of time.

- **Ignore**:
  Constant display of the standard user interface
- **Turn off**:
  Blacks out the real time video in order to avoid useless consumption of the system resources which would otherwise be used for video display.
- **Cicle**:
  After a certain amount of user interface inactivity, the sequence which is determined by the following parameters is shown in "Full Screen" mode on the display.

Time Out (min.)	Range *1-20*	Default *5*

The inactivity time, expressed in minutes, after which the display passes into cyclical or blank screen mode.

Number of cycle items	Range *1-23*	Default *4*

Number of screens which make up the cyclical sequence.

Cycle item	Range *1-N. Cicle items*	

Selects the element of the cyclical sequence to be configured

	Range *Camera 1- 16, Quad 1 - Quad 4, Octal 1, Octal 2, Hexal*	Default *Camera 1*

Associates the selected cyclical element with a video camera, a quad, an octal or a hexal.

Time (sec.)	Range *2-120*	Default *5*

Duration of the selected cyclical element's display in seconds.

Video out standard	Range *None, PAL, NTSC*	Default *PAL*

Selects the video standard to be used for the device's analogue videos. By selecting "None", no video signal will be sent to the outputs.

Video out	Range *CVBS, S-video, CVBS+S-video*	Default *CVBS+S-video*

Enables/disables the analogue video outputs on the composite video and S-Video connectors respectively.

Quad		

This button opens the screen which allows the user to configure the quad display modes.

Octal		

This button opens the screen which allows the user to configure the octal display modes.

WARNING

WARNING:
Modifying the TV Standard and/or Signal parameters will cause the device to reboot.

Quad
Quad configuration screen.

Quad

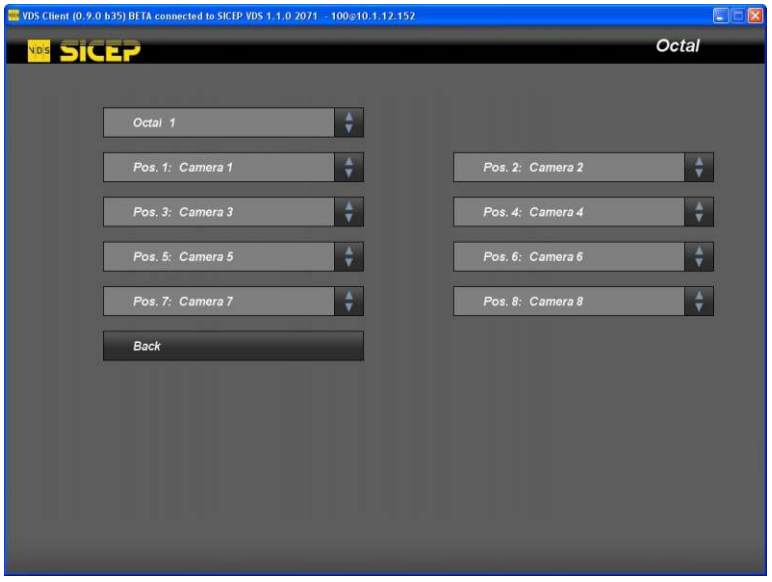
Quad	Range *1-4*	

Selects the quad to be configured.

Pos. X	Range *Camera 1-16*	

Determines the video camera image to be displayed in the X position of the current quad. For X from 1 to 4.

Octal
Octal configuration screen.



Octal

Octal	Range *1,2*	

Selects the octal to be configured.

Pos. X	Range Camera 1-16	

Determines the video camera image to be displayed in the X position of the current octal. For X from 1 to 8.

The positions of the video cameras are numbered from left to right and from bottom to top. For example, position 4 is found at the beginning of the octal's second row.

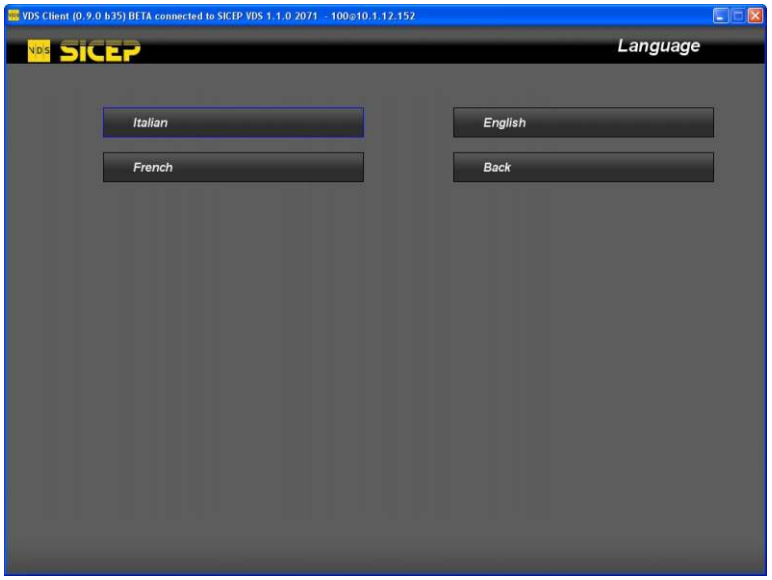
NOTICE

NOTE: *It is not possible to insert the same video camera twice in the same quad/octal.*

Language

This screen allows the user to select the current language of the interface from amongst those which are available.

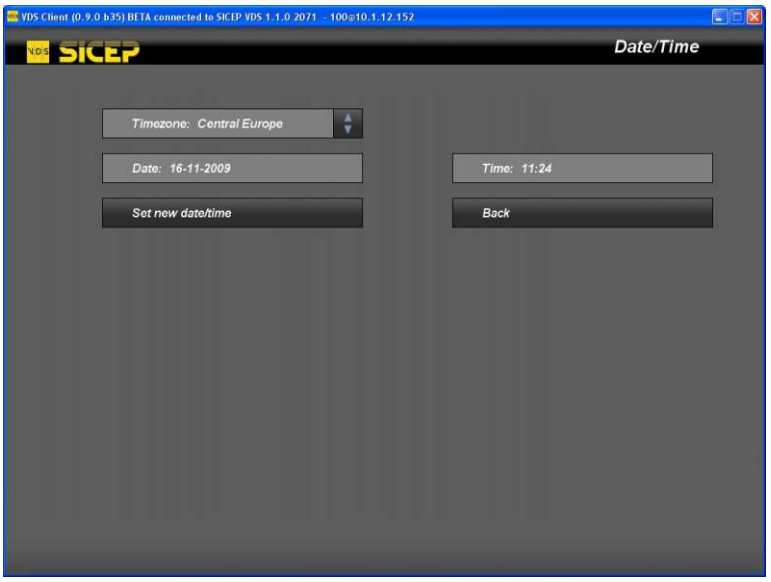
At the moment, the Italian, French and English languages are available.



Language

Date/Time

This screen allows the user to configure the parameters for managing the device's system time.



Date/Time

Timezone	Range *Central Europe, Saudi Arabia*	Default *Central Europe*

Sets the time zone to be used in order to represent the current system time and for managing daylight-savings time alternations.

Date (gg-mm-aaaa)		

Field for setting the device's system date.

Time (hh:mm)		

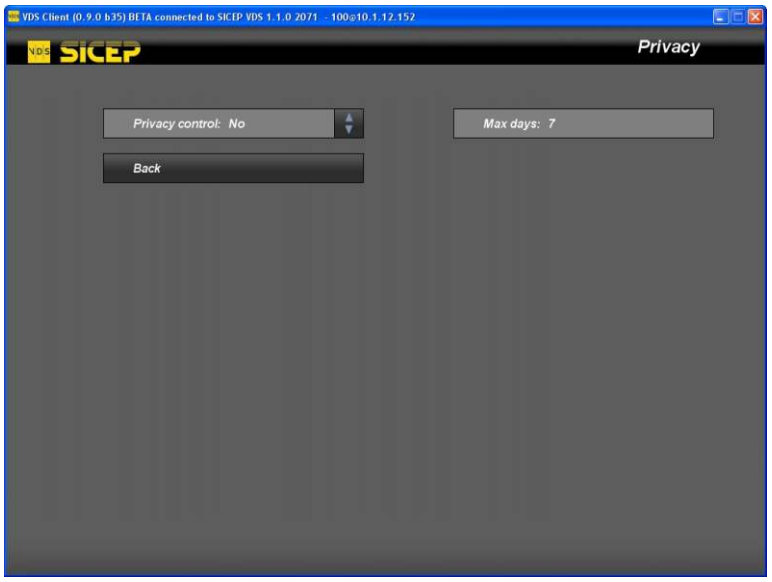
Field for setting the device's system time.

Set new date/time	Range *Yes, No*	Default *No*

Press this button to save the date and time above

Privacy

This function allows the user to limit the time which the recordings will remain on the hard disk by a number of days which can be set by the user.



Privacy

Privacy control	Range *Yes, No*	Default *No*

Enables/disables the limit on the amount of time for which the recordings will remain on the hard disk.

Max days	Range *1-240*	Default *7*

The number of days for which to keep the recordings on the hard disk. The maximum storage time depends on the actual capacity of the hard disk.

Disk

This screen allows the user to configure hard disk storage supports.

Disk

Flash	Range *Yes, No*	Default *No*

Indicates whether a flash drive device has been installed for storing the recordings

Flash type	Range *IDE, USB*	Default *IDE*

Indicates the type of flash drive device which has been installed for storing the recordings

Disk mode	Range *Normal, Raid*	Default *Normal*

Determines the mode in which two contemporary hard disks will be used, if installed. If set to Normal, the two hard disks, even if of different models and capacities, will be managed in such a way so as to have the sum of their capacities available for data storage. If set to Raid, the two hard disks must be of identical models and capacities and will be used in parallel in such a way so that each acts as an exact copy of the other.

WARNING

WARNING: *Enabling raid mode will cause the data present on both disks to be deleted completely.*

Fix Raid		

Button for realigning the hard disks. This function must be used in case of an hard disk failure in order to replace it. When you press the button, the device will shutdown and the installer will need to replace the broken disk. At next reboot, the device will start the realignment operation that will run in the background during normal function until completed; the graphical interface may result as slower while this operation is in progress.

Min free space (Gb)	Range *5-20*	Default *15*

Disk space which will be left free of recordings. This space will be necessary whenever exporting videos to external devices, as it acts as a temporary support memory for the data being exported. The higher the amount of data to be exported (for example, recordings which utilize higher bit rates or else large numbers of recordings), the higher the amount of disk space which must be kept free. **Only modify this parameter in the case of necessity.**

WARNING

WARNING:
Do not set this parameter to a value inferior to 15 Gb as this could cause problems when exporting large amounts of data from the device.

Copy/Restore Setup

The device is capable of saving its current configuration to a file and restoring a configuration from a previously saved file. If no configurations have previously been saved, the user can still restore the device's factory default configuration by pressing the "default" button.

Copy/Restore Setup

Copy to file		

Button for saving the device's current configuration to a file. If the user is accessing the device in local mode, the file will have to be saved to a previously connected USB physical storage support. In remote mode, on the other hand, the VDSClient software will display a dialog box which allows the user to select a location on the PC in which to save the file.

Restore from file		

Button for restoring a previously saved configuration. In local mode, just insert the USB support containing the desired configuration file and press "Restore from file". In remote mode, after pressing "Restore from file" the VDSClient software will display a dialogue box which allows the user to browse the remote PC's file system for the desired configuration file. Important: Read the notice below

Default		

Button for restoring the factory default configuration. Important: Read the notice below

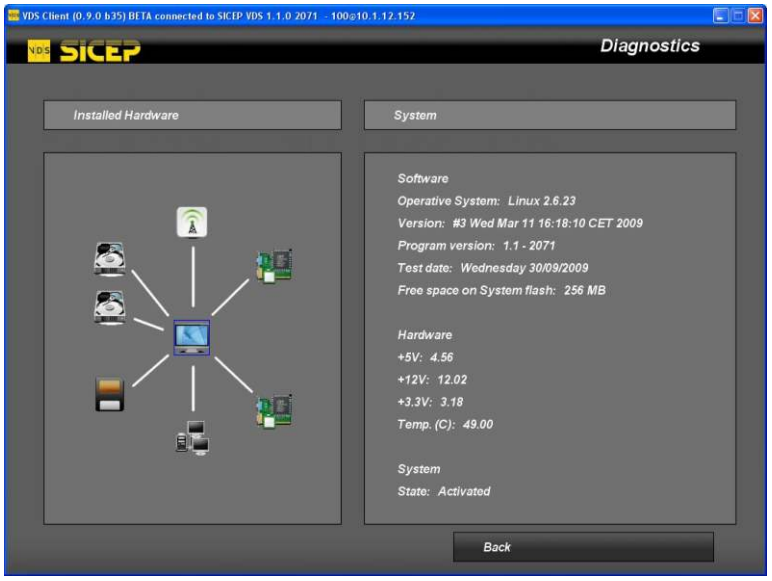
WARNING

WARNING:

Restoring the factory default configuration will reset the device to it factory default values, including communications parameters. For this reason, if the user performs the "restore configuration" operation from a remote workstation using VDSClient, he/she will no longer be able to connect to the VDS device after disconnecting. In order to overcome this obstacle, once the default configuration has been restored through VDSClient, immediately reset the correct values for the communications parameters (in relation to TCP / IP, 3G, etc.) before disconnecting: The new communications parameters are only applied after the current connection has been closed. This same warning also applies in the case of restoring previously saved configurations with communications parameters which are not consistent with the current installation.

7.8- DIAGNOSTICS

This screen allows the user to obtain a general overview of the device's hardware and software status.



Diagnostics

By clicking on the various icons on the left hand side of the screen, the user can display information regarding the individual devices which make up the VDS device on the right hand side. The available devices, as well as the relative information displayed on the screen, are listed below. In order for the device to function properly, it is important that the diagnostics data satisfy the values show in parentheses.

- **System**.
  - **Software**
    - **Operative System**: Version of the operating system installed
    - **Version**: Date upon which the device's operating system was compiled.
    - **Program version**: Version and build number of the device's software application

- **Test Date**: Date upon which the device was tested at the Sicep facility.
- **Free space on System flash**: The system's flash memory contains the operating system and the application. If this value is inferior to 5 Mb and the user should want to upgrade the device's application, it is recommended to perform a system flash memory cleanup from the **ARCHIVE CLEANING** section.

- **Hardware**
  - **+3.3V, +5V, +10V**: The mother board's power supply voltage values
  - **Temp. (C)**: The temperature of the mother board
- **System**
  - **State**: (Activated/Deactivated) indicates the current system status.

- **Flash IDE/USB**
  - **Present**: (Yes, No) indicates whether a flash drive is present
  - **Flash size**:
  - **Used space**:
  - **State**: (-)
- **3G Modem**
  - **Enabled**: (Yes, No) indicates whether the modem is enabled
  - **Available**: (Yes, No) indicates whether the modem has been detected by the system
  - **Connected**: (Yes, No) indicates whether the modem is connected to the 3G network

NOTICE

NOTE: *The remaining data fields, in relation to the 3G modem, may also constantly display the value 0, as not all modem models render this information available.*

- **Hard disk 0/1**
  - **Id**: (0/1)
  - **Present**: (Yes). Yes will be displayed for both hard disk fields if there are 2 hard disks on board
  - **Disk size**: (ex. 150229 MB). Size of the hard disk expressed in Megabytes. This value will vary based on the type of hard disk installed.
  - **Used space**: (ex. 128 MB). Space on the hard disk, expressed in Megabytes, which is occupied by data
  - **State**: (Ok)
  - **Raid**: Status of the hard disks in Raid configuration
    - **Ok**: Indicates that the two hard disks are synchronized and functioning
    - **Synchronization**: Synchronization of the hard disks in progress in the background. This operation takes place upon the creation of the raid configuration
    - **Disk failure**: Followed by a number, this field indicates that the specific disk malfunction, indicated by the number displayed, has occurred.
    - **Restore**: The hard disk alignment operation is in progress. This operation is implemented by pressing the "Raid restore" button, especially after having replaced one of the hard disks.
    - The **-** symbol indicates that the Raid configuration has not been activated.

NOTICE

NOTE: *In diagnostics, in the case of hard disks in Raid configuration, the second disk, acting as a copy of the first, will not be indicated as present. Rather, the total Raid status will be indicated on the first hard disk.*

- **Capture card 0/1**
  - **Id**: (0/1)
  - **Present**: (Yes). Yes for both if 2 video capture cards are present, such as in the cases of the VDS-12 and VDS-16 devices
  - **Card code**: Card identification number
  - **DSP count**: Number of the DSP on board the card
  - **Channels count**: Number of the audio/video channels on board the video capture card
  - **Serial**: Card serial number
  - **State**: (Ok)
- **VDS/P Card**
  - **Present**: (Yes)
  - **Init**: (Ok)
  - **Version**: (ex. 1.01) version of the firmware contained on the card

If the diagnostics page has been open for quite some time and the user wants to update the values in relation to one or more devices, this can be performed by clicking on the relative icon with the mouse.

7.9- ARCHIVE CLEANING

This page allows the user to delete all of the recordings and events which are saved upon the device's internal storage devices, therefore both the hard disks as well as the flash memory.

Archive cleaning

The available options include:

Flash memory cleanup:
For cleaning the flash memory which contains the temporary recordings.

Hard disk cleanup:
For deleting the contents of all of the hard disks present.

Complete cleanup:
For deleting the contents of the flash memory, as well as of the hard disks present.

System flash memory cleanup:
Initiates the cleanup of the memory which contains the device's Linux operating system.

NOTICE

NOTE: *Performing a cleanup of the archives will cause the device to restart. If the cleanup is performed from a remote workstation, the VDSClient software will disconnect.*

7.10- REBOOT/SHUTDOWN

In local mode, this screen allows the user to reset and shutdown the VDS device via software, through the use of the relative buttons.

Reboot/Shutdown

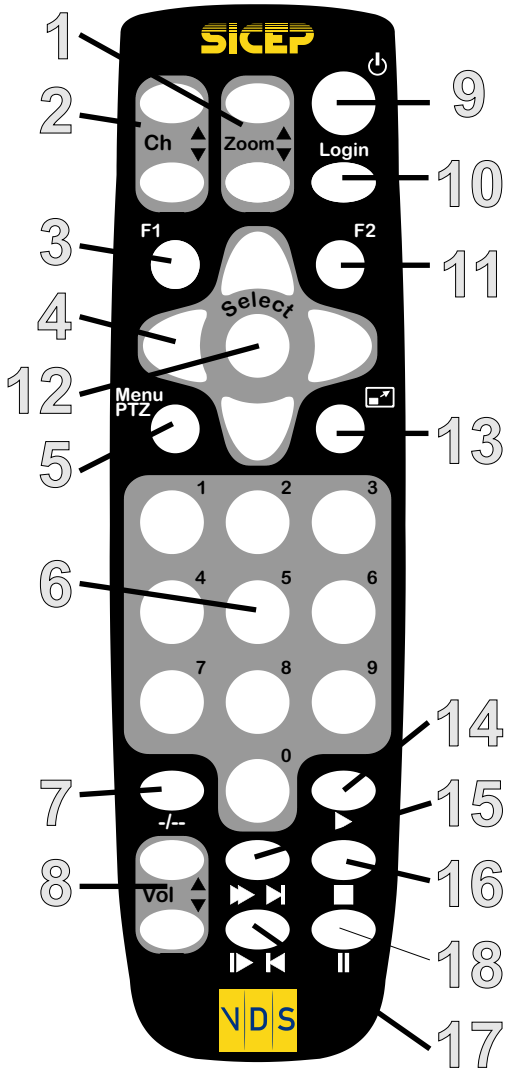
WARNING

WARNING!:

In the case of the remote interface, shutting down the device will make it necessary for the user to go to the device's installation location in order to manually reactivate it. Therefore, in order to avoid such an inconvenience in the event that the shutdown button is pressed accidentally, an additional shutdown confirmation page has been included.

8 - THE REMOTE CONTROL

The remote control allows the user to interact with the device, while it is only connected to the monitor, without having to use the mouse or keyboard.



The descriptions of the functions associated with the remote control's buttons are provided below.

1	**Zoom Buttons:** In PTZ mode, press this button to zoom using the selected Speed-Dome video camera
2	**Ch Buttons:** Press these buttons to change video camera views, switching to the previous or the next
3	**F1 Button:** Future expansion
4	**Arrow Buttons:** In normal mode, press these buttons to move the cursor within the screens of the interface. In PTZ mode, press these buttons to move the Speed-Dome video camera up, down, left and right respectively.
5	**PTZ Menu Button:** Press this button to switch to or exit from PTZ mode. PTZ mode is required in order to command Speed-Dome video cameras, as it enables the remote control's "Zoom" and "Arrow" buttons to move the video camera.
6	**Numeric buttons:** Use these buttons to switch video cameras
7	**Amount selection button:** Use this button to select a channel which is made up of one/two digits. Pressing two numeric buttons quickly will automatically select the channel made up of two digits regardless.
8	**Vol buttons:** Press these buttons to decrease the volume of the audio being played back
9	**Power Button:** Press this button to turn on or shutdown the VDS device. In both cases, the button must be held down for a few seconds.
10	**Login Button:** Press this button to access the Login screen of the VDS interface
11	**F2 Button**: Press this button to access the screen previous screen. This is the equivalent of pressing the "back" button on the interface.
12	**Select Button:** Press this button to activate the interface buttons in order to modify a combo box or, with a text field, in order to display the virtual keyboard required for text editing.
13	**Full Screen Button:** Press this button to switch to full-screen mode. Press the "Select" button to exit full screen mode.
14	**Play Button:** Press this button to initiate video playback for a previously selected video.
15	**Fast forward / Step forward button:** During video playback, press this button to increase the playback speed. While playback is paused, press this button to move the video ahead one frame.
16	**Stop Button:** Press this button to stop video playback.
17	**Slow forward / Step back button:** During video playback, press this button to decrease the playback speed. While playback is paused, press this button to move the video back one frame.
18	**Pause Button:** Press this button to pause video playback.

The arrow keys are sufficient for moving within the VDS interface with the remote control. When moving between controls, the selected control is identified by a white frame. It is possible to select three different types of controls within the interface:

- **Buttons.**
  In this case it is sufficient to press the "Select" button on the remote control in order to activate the button's function.
- **Text fields.**
  In order to modify the text field, do the following:
  - Press "Select" to display the virtual keyboard
  - Use the remote control's left and right arrow buttons to move the cursor upon the virtual keyboard and select a character.
  - Press the "Select" button to insert the selected character in the text field. Repeat these last two operations until the desired text has been inserted. Use the "Del" button on the virtual keyboard to delete a character from the text field.
  - After having finished editing the text, close the virtual keyboard by pressing its relative "Close" button.
- **Combo box.**
  When a combo box is selected, do the following to modify its value:
  - Activate the combo box by pressing the "Select" button on the remote control.
  - Use the arrow buttons to scroll through the possible values until the desired value is highlighted.
  - Press the "Select" button again to confirm the modification, exit the combo box and return to interface navigation.

9 - MAINTENANCE

9.1- UPDATING THE SOFTWARE

The VDS device's software can be upgraded through the SicepMVC application, which is produced by Sicep. This program allows a remote user to use a PC with Windows installed to connect to the device through a TCP/IP connection and upgrade the VDS software.
In order to perform this operation, the user must be in possession of the following device information:

- The device's numeric or symbolic IP address
- The MVS password (factory default: sicep)
- The MVS code (factory default: 100)

The following operations are sufficient in order to perform the upgrade:

- Start the SicepMVC program
- Press the flash button on the command bar in the upper right,
- Select the *.upg file containing the upgrade
- Select Upgrade
- Select TCP/IP (static)
- Insert the data relative to the VDS device (IP address/symbolic name, device code, MVS password)
- Press the OK button

If the device is configured to use a UDP dynamic IP address in relation to the PC where SicepMVC is installed, the operations to be performed are the following:

- Start the SicepMVC program
- Wait for the message "KeepAlive cp=xxxx" to appear at the bottom of the main screen (where xxxx indicates the code of the device to be upgraded)
- Press the flash button on the command bar in the upper right,
- Select the *.upg file containing the upgrade
- Select Upgrade
- Select TCP/IP (dynamic)
- Insert the data relative to the VDS device (device code, MVS password)
- Press the OK button

From the moment in which the upgrade is initiated, the device will transfer the upgrade package to the device, halt the current software version and start the new software version, all within an amount of time which depends upon the bandwidth available for transferring data to the device.

NOTICE

NOTE:

If a recipient has been configured upon the device, each time the software is upgraded the device will attempt to connect to the recipient in order to transmit the Keepalive message.

9.2- TROUBLESHOOTING

The following table contains a list of the most common device malfunctions and their relative solutions. In the event that a malfunction is not able to be resolved, please contact the Sicep assistance service.

CAUTION

CAUTION: *The operations marked with an asterisk* * *() are only intended for specialized SICEP personnel.*

CAUTION

DANGER: *Make sure that the device's power supply has been disconnected (by unplugging the power cable) before opening its casing.*

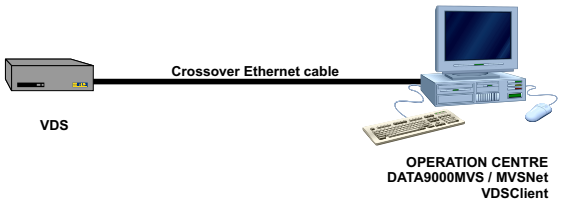
PROBLEM	POSSIBLE CAUSE	SOLUTION
The device does not turn on	No mains electrical power supply available	Check that the mains power cable is properly connected and that the device's main power switch is in its ON (I) position.
		* Open the casing and check that the ATX power supply's AL-4W fuse is not broken.
The device does not turn on, the POWER and HD led indicators at the front are off	The RAM has not been properly inserted or is faulty	* Open the casing and check that the RAM is properly inserted
The device does not turn on, all of the led indicators at the front are off	AL-4W power supply fuse broken	* Open the casing, if the led indicators on the VDS/P card are all off then check the FS1 fuse on the AL-4W power supply
	ATX power supply fuse broken	* Open the casing, if some of the led indicators on the VDS/P card are on then check the F1 fuse on the ATX power supply
The device is equipped with a backup battery, but shuts off immediately whenever the mains power supply is interrupted.	Battery drained	Wait for the battery to recharge and try to turn the device on again without the mains power supply
	Battery fuse broken	* Open the casing and check that the X7 fuse on the VDS/P card is not broken.
The device turns on, but blocks itself immediately after the "Via Embedded" screen	IDE Flash memory not properly inserted or faulty	* Open the casing and check that the IDE Flash memory is properly inserted
	Video capture card not properly inserted or faulty	* Open the casing and check that the video capture card and the riser card are properly inserted into the PCI slot.
The device does not turn on automatically when powered by the mains power supply	Incorrect bios configuration	* Configure the bios so that the device turns on automatically once the mains power supply has been restored (See the appendix "Special operations – Bios Configuration")

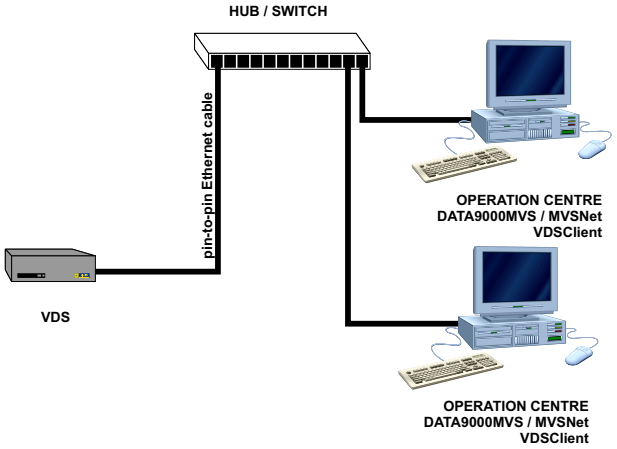
The device turns on but does not detect any boot device	Incorrect boot device order in the bios	*Access the bios and check its configuration as described in “Special operations – Bios Configuration
A hard disk has been installed and the VDS device turns on, but does not detect any boot device.		
The MVSNet center is not able to manage the VDS device	Software incompatibility: MvsNET software version prior to 1.0.1540	Upgrade the MvsNET management software to the current version.
The DATA9000MVS center is not able to manage the VDS device	Software incompatibility: DATA9000MVS software version prior to 1.48c, lack of MvsVDS extension.	Upgrade the DATA9000MVS management software to the current version and install the MvsVDS extension.
The device does not send alarm notifications.	Incorrect communications device and/or recipient configuration	Check the settings in the **CONFIGURATION COMMUNICATION section**
The received images are dark and without contrast	Incorrect video camera lighting.	Change the orientation of the video cameras or the type of lighting: If fluorescent lights are used, try replacing them with incandescent lights.
	Video connection cables of incorrect impedance.	Use coaxial cables with an impedance of 75Ω.
The device does not respond to queries, but sends the alarm notification correctly.	The IP address of the device to query is incorrect	Check that the IP address is configured properly within the software used to query the device
	Incorrect MVS password	Set the correct MVS password on the software used to query the device
The device does not respond to queries through the Ethernet network.	The device was queried and then its IP address was changed	Make the device send an alarm notification to a valid recipient on the network in order to register its new IP address. Otherwise, turn the switch or router to which the VDS device is connected off and on again.
The device does not transmit the pre-alarm video.	Incorrect configuration of the recording mode.	Check that alarm notification sending has been enabled in **CONFIGURATION EVENTS VIDEO INPUTS**
	Incorrect configuration of the pre-alarm video associated with one of the logical inputs	Check that the logical input at which the alarm occurred has a pre-alarm video with a duration greater than 0 associated with it. See **CONFIGURATION EVENTS VIDEO INPUTS**
The device does not transmit the alarm video	Incorrect configuration of the recording mode.	Check that alarm notification sending has been enabled in **CONFIGURATION EVENTS VIDEO INPUTS**
	Incorrect configuration of the alarm video associated with one of the logical inputs.	Check that the logical input at which the alarm occurred has an alarm video with a duration greater than 0 associated with it. See **CONFIGURATION EVENTS VIDEO INPUTS**

The device does not respond to the MVS.NET historical query	An incomplete date has been inserted.	Always insert the year using 4 digits. Always insert the time using 4 digits.
	A date which is not present in the recordings has been inserted.	Check the device's periods of activity and recording modes.
	The device's system time is not synchronized (is behind) with respect to that of the operational center.	Check the device's internal clock in **CONFIGURATION SYSTEM DEVICE**
The device does not record the pre-alarm video.	Incorrect configuration	Check the following settings: **CONFIGURATION EVENTS DIGITAL INPUTS**
The device does not record the alarm video	Incorrect configuration	Check the following settings: **CONFIGURATION EVENTS DIGITAL INPUTS**
The VDSClient software disconnects	The device is resetting itself	Wait for the device to turn back on and check its functionality in the DIAGNOSTICS section.
It is not possible to upgrade the device's software with SicepMVC	Incorrect IP address, device code or password	Check the IP address and the correctness of the authentication data
	Software incompatibility: SicepMVC version prior to 1.20	Use SicepMVC software version 1.20 or later
Hardware out of service message	VDS/P card faulty or not properly connected	* Open the casing and check the VDS/P card connections
	Video capture card faulty or not properly connected	* Open the casing and check that the video capture card and the riser card are properly inserted into the PCI slot.
Video absent signal message.	Video cable not properly connected	Check that the video cable is properly connected to the device and that the video camera is powered on
Device overheating message	Improper installation	Reposition the device in accordance with the indications provided in the chapter "Selecting the installation location"
	Fan faulty	* Open the casing and check the device's cooling fan. Replace the fan if necessary
Hard disk malfunction message.	Hard disk faulty or not properly connected	* Open the casing, check the data cable connection between the hard disk an the mother board and check the power cable connection between the hard disk and the ATX power supply
The device has reset itself	Hardware problem	* Open the casing and check the device's internal connections in relation to the part indicated by diagnostics as not functioning.

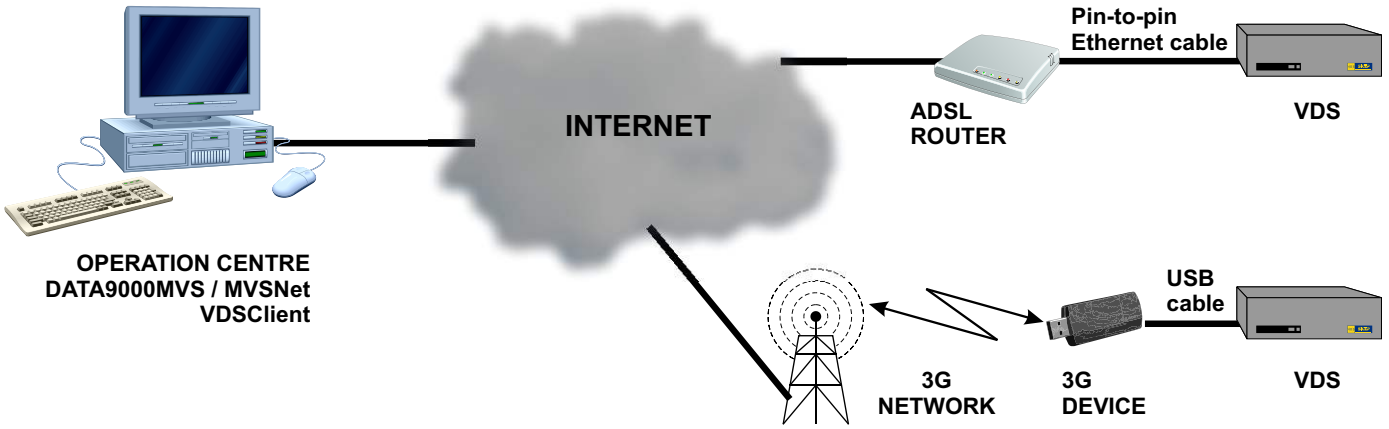
10- APPENDIX A: CONNECTION TYPOLOGIES

10.1- TCP/IP CONNECTION





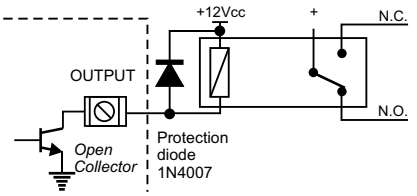
10.2- TCP/IP CONNECTION VIA INTERNET



11- APPENDIX B: SPECIAL OPERATIONS

11.1- OUTPUT CONNECTIONS

The device's available outputs are capable of handling maximum charges of 100mA. For higher charges, it is necessary to use a relay connected as shown in the diagram.



11.2- REPLACING FUSES

As previously stated, the device contains three different fuses in three distinct parts: the VDS/P card, the AL-4W power supply and the ATX power supply. The procedure for removing, checking and replacing these fuses, if necessary, is described below.

WARNING **DANGER:** *Make sure that the device's power supply has been disconnected (by unplugging the power cable) before opening its casing.*

The procedure for opening and closing the device's casing is the same for all three fuses.

- Open the VDS device's cover by removing the 4 screws located on the two sides of its casing
- Lift the back of the cover slightly and slide it towards the rear of the device in order to extract it from the base. Be careful to not pull the cover too far away from the base, as the fan which is mechanically fastened to the cover itself also is electrically connected to the VDS/P Card.
- Once the cover has been removed, extract the fan's power cable from the FAN1 connector on the VDS/P card. This will facilitate the subsequent operations.
- For the VDS/P card, X7, 5x20 mm 5A rapid glass fuse:
  - Remove the plastic cap of the fuse
  - Check the fuse and replace it with one of the same type, if necessary
  - Reapply the cap
- For the AL-4W mains power supply, FS1, 5x20 mm 4A rapid glass fuse
  - Remove the plastic cap of the fuse
  - Check the fuse and replace it with one of the same type, if necessary
  - Reapply the cap
- For the ATX power supply, F1, 15A mini-blade fuse
  - Disconnect the data and power cables from the hard disk
  - Remove the hard disk bracket by removing the 4 screws which fasten it to the base
  - Check the fuse and replace it with one of the same type, if necessary
  - Reposition the hard disk's bracket in its lodging and fasten it with the 4 screws
  - Reconnect the data and power cables to the SATA hard disks
- Once the fuses have been checked and/or replaced, close the device's casing. Make sure that the cable for the fan on the cover has been reinserted into the VDS/P card's FAN1 connector.
- Tilt the frontal portion of the cover into its lodging at the rear of the device and push the cover forward until makes contact with the front. Lower the rear portion of the cover in such a way so that the cover engages with the base.
- Afterwards, lower the rear portion in such a way so that the cover engages with the base.
- Fasten the cover to the base with the 4 lateral screws

11.3- Bios Configuration

The VDS device's bios is configured during final testing at the manufacturer's facility. The operations described hereafter are only necessary if the bios is no longer properly configured or if the installation of the hard disk is performed by the customer.

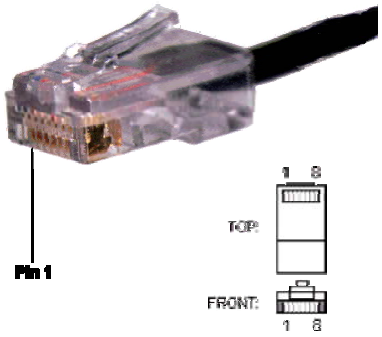
- Access the bios by repeatedly pressing the "Del" button on the keyboard while the VDS device is booting.
- Set the bios to its default configuration by selecting the "Load optimized defaults" option
- Access the INTEGRATED PERIPHERALS section and set SATA MODE to IDE.
- Access the "ADVANCED BIOS FEATURES Hard disk boot priority" section and check that the first item in the list of boot devices is:
  CH0 M. *Name of the 512 MB IDE Flash memory, for example "Transcend"*
- Access the POWER MANAGEMENT SETUP section and set AC LOSS AUTO RESTART to ON.
- Save the new settings by pressing the F10 key.
- Wait for the VDS to restart.

WARNING

WARNING: *Do not perform any modifications other than those described above. The operations described above must nevertheless be performed starting with the default bios configuration.*

12- APPENDIX C: CONNECTION CABLES

12.1- ETHERNET CABLE



In order to create cables which comply with the EIA/TIA-568B RJ-45 standard, required for connecting to 10BaseT Ethernet networks, use two RJ45 connectors and a maximum of 90 meters of unshielded Category 5 networking cable (CAT5 UTP), and perform the connections in accordance with the wiring tables shown below.

Refer to the diagram in order to identify the numbering of the RJ45 connector's pins.

Direct or pin-to-pin cable

Connector 1 and 2	
Pin	**Colour**
1	White/Orange
2	Orange
3	White/Green
4	Blue
5	White/Blue
6	Green
7	White/Brown
8	Brown

Reverse or crossover cable

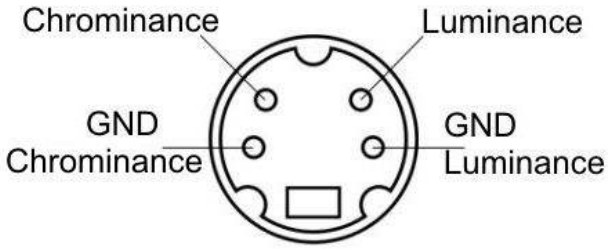
Connector 1		Connector 2	
Pin	**Colour**	**Pin**	**Colour**
1	White/Orange	1	White/Green
2	Orange	2	Green
3	White/Green	3	White/Orange
4	Blue	4	Blue
5	White/Blue	5	White/Blue
6	Green	6	Orange
7	White/Brown	7	White/Brown
8	Brown	8	Brown

NOTICE

Note. *The diagram shown is that which is complies with the EIA/TIA 568B RJ-45 recommendations.*
The brown-brown/white and blue-blue/white wires are not used, the complete wiring scheme is shown.

12.2- S-VIDEO CABLE

In order to connect to the S-video output, a cable with a four-pole male mini-DIN connector is required, keeping in mind that the device's output connector is equipped with the following poles:



13- APPENDIX D: QUICK START

This appendix provides some indications regarding the most common configurations which are required for the initial installation of the VDS device.

13.1- RECORDING CONFIGURATION

The device is configured with factory default settings upon delivery. These settings provide for recording to take place on all of the video cameras only in the case of input variation and video loss events. The default video recording format is DCIF (528x384). It may therefore be necessary to modify these settings according to the user's requirements by respectively accessing and modifying the **CONFIGURATION RECORDING** and **CONFIGURATION VIDEO** sections. If, on the other hand, the user should decide to continue using event-based recording, it is nevertheless possible to change the video camera to be used in relation to one of the 4 possible input variation events by accessing and modifying the **CONFIGURATION EVENTS DIGITAL INPUTS** section.

13.2- TCP/IP CONFIGURATION

If the device it to be connected to a network, it is important to configure the TCP/IP parameters in the **CONFIGURATION COMMUNICATION TCP/IP NETWORK** section.

The following operations must be performed in this section:

- Enable the network card with the appropriate combo box
- Only enable DHCP if the network has a device which performs the function of a DHCP server. If this is the case then the "IP Address" field can be left empty and the next step can be skipped.
- Assign a fixed IP address to the device by filling in the IP address field
- If the device is to be connected to the internet, then the "netmask" and "gateway" fields must also be filled in. In this case, the "gateway" field must contain the IP address of the ADSL router used to connect to the internet.
- Leave the "Timeout conn." field set to its default value

13.3- ADSL ROUTER CONFIGURATION

In order to allow the device to communicate with other devices over the internet, the ADSL router must be configured properly. The router must be configured to route incoming connections at port 8000 to the VDS device's private IP address.

13.4- REPAIR REQUEST FORM

WARNING

WARNING!

*In the cases of malfunctions, functional anomalies and/or repair requests, please download the **REPAIR REQUEST FORM** from the documentation section of our website **www.sicep.it** and attach the duly completed form to the device when sending it for repair.*

CERTIFICATE OF GUARANTEE

- The guarantee on electrical and / or electronic products manufactured by SICEP spa is valid for 24 months from the purchase date, or from the date on the invoice.
- This guarantee does not extend to the software produced and / or sold by SICEP spa, nor does it cover damages of any kind that may derive from the use of the same.
- Should the products or parts of them prove faulty owing to the quality of the materials used or due to anomalies that occurred during manufacturing, the guarantee limits to the replacement of said products or parts. The above guarantee includes costs of labor necessary to carry out repairs.
- In cases where one or more parts of the faulty device are missing, the device will be repaired and returned to the client without integration of missing pieces, excepting when there is an explicit request for integration.
- This guarantee does not extend to malfunctions due to normal wear and tear of the products or their parts (including batteries).
- This guarantee does not cover damages caused by negligence, carelessness, accidents or improper use of the products or parts of the same and / or the software. The same applies to damage caused by atmospheric agents, exposure of the products or their parts, and / or of the software, to inappropriate environmental conditions, including damages caused, either directly or indirectly, by excessive temperature, dampness, physical or electrical stress, electrical blackout or power surges, lightning, static electricity, fires, floods and any other circumstances that are not ascribable to the direct responsibility of SICEP spa.
- This guarantee does not cover damages caused by poor or incorrect installation - or installation that is not compliant with the relevant instructions or - lacking the same - installation carried out in an unprofessional manner, wrong or poor maintenance interventions in accordance with what is indicated in the relevant operating instructions or according to usual maintenance practice, improper or wrong operation, negligence or lack of ability to use the product correctly or indeed other causes of any kind that are not ascribable to SICEP spa.
- This guarantee does not cover any damage originating from faults in assembled components or parts of the product, although certified in any manner, that it is not possible for SICEP spa to identify in any way in advance, during or after the manufacturing of the end product in accordance with the normal checking and verification procedures applied for components or products and external parts of them. Damages or defects ascribable to repair and maintenance interventions, replacements or changes carried out by third parties not directly authorized by the manufacturer, or carried out by others employing unoriginal or non-compliant products, parts of products and / or software that are therefore not guaranteed, not certified and not approved or authorized by SICEP spa, are not covered by this guarantee.
- In any case, damages and faults arising from the use of spare parts and accessories that are non-compatible, unoriginal, non-compliant, uncertified and not approved by the manufacturer are not covered by this guarantee. Same applies to all damages ascribable to changes made to the product or parts of the same and / or to the software that are in no way approved by the manufacturer or due to causes of force majeure and / or unforeseeable circumstances.
- In order to avoid application of the troubleshooting fee (€30.00 + VAT), the material to be repaired has to be sent carriage-paid to SICEP spa accompanied by the "Repair or change request form" completely filled in.
- SICEP spa reserves the right to make amendments to these guarantee conditions without prior notice. In any case, the conditions in force at the time of purchase of the electric and / or electronic product manufactured by SICEP spa will be considered valid.

DICHIARAZIONE DI CONFORMITÀ

DECLARATION OF CONFORMITY / DÉCLARATION DE CONFORMITÉ

Identificazione del prodotto / *Product identification / Identification du produit:*

Tipo	:	Videoregistratore digitale 16 ingressi
Type	:	*16 channel digital video recording system*
Type	:	*Enregistreur vidéo numérique 16 canaux*
Modello */ Model / Modèle*	:	VDS
Modelli derivati / *Derived Models / Modèles dérivés*	:	VDS-16HD, VDS-12HD, VDS-8HD, VDS-4HD, VDS-16, VDS-12, VDS-8, VDS-4

Dichiara, sotto la propria responsabilità, che il prodotto è conforme alle seguenti normative applicabili (direttiva 2008/108/CE, 2006/95/CE):
Declares, under proper responsibility, that the device is compliant to the following directives:
Il dèclare, sous la propre responsabilité, que le produit est conforme aux suivante normatives applicables:

(protezione della salute e della sicurezza dell'utente)
(safety requirements)
(protection de la santé et de la sûreté de l'utilisateur)
EN 60950-1:2004/05

(requisiti di protezione per quanto riguarda la compatibilità elettromagnetica)
(electromagnetic compatibility requirements)
(réquisitionné de protection en ce qui concerne la compatibilité électromagnétique)

CEI EN 55022:1999 Class A, B
CEI EN 55022/A1:2001 +/A2:2003
CEI EN 55022/A1-A2/EC:2005
CEI EN 55022/A1-A2/EC:2008
EN 61000-3-2:2007
CEI EN 61000-3-3:1997/06 +/A1:2002/05 +/A2/IS1:2006/03
CEI EN 55024:1999/04 +/A1:2002 +/A2:2003 +/IS1:2008

Data 24/04/2009

SICEP S.p.A.
Roberto Carmine Iodice

SICEP S.p.A. Capitale sociale € 1.248.000,0 int. vers.
50052 Certaldo Firenze • Via Calabria, 14 • Tel. 0571 664166 r.a. • Fax 0571 652285
Codice Fiscale e P.IVA 04552390488 • C.C.I.A.A. n.460895 FI • Iscr. Trib. di Firenze n.10356
www.sicep.it • e-mail:sicep@sicep.it

http://www.sicep.it
e-mail: sicep@sicep.it

SICEP S.p.A.
Via Calabria, 14/16
50052 Certaldo (FI) - ITALY
Tel. 0571 664 166 r.a.
Fax 0571 652 285

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